CDP-CX210/CX681

SERVICE MANUAL

US Model
CDP-CX210/CX681
Canadian Model
CDP-CX210

- CDP-CX210 is similar to the earlier CDP-CX200 (CND) model.
- CDP-CX681 is similar to the earlier CDP-CX200 (CND) model.
- Refer to CDP-CX200 service manual (9-960-723-XX) for information not contained in this service manual.

DIFFERENCE TABLE

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  CND : Canadian model

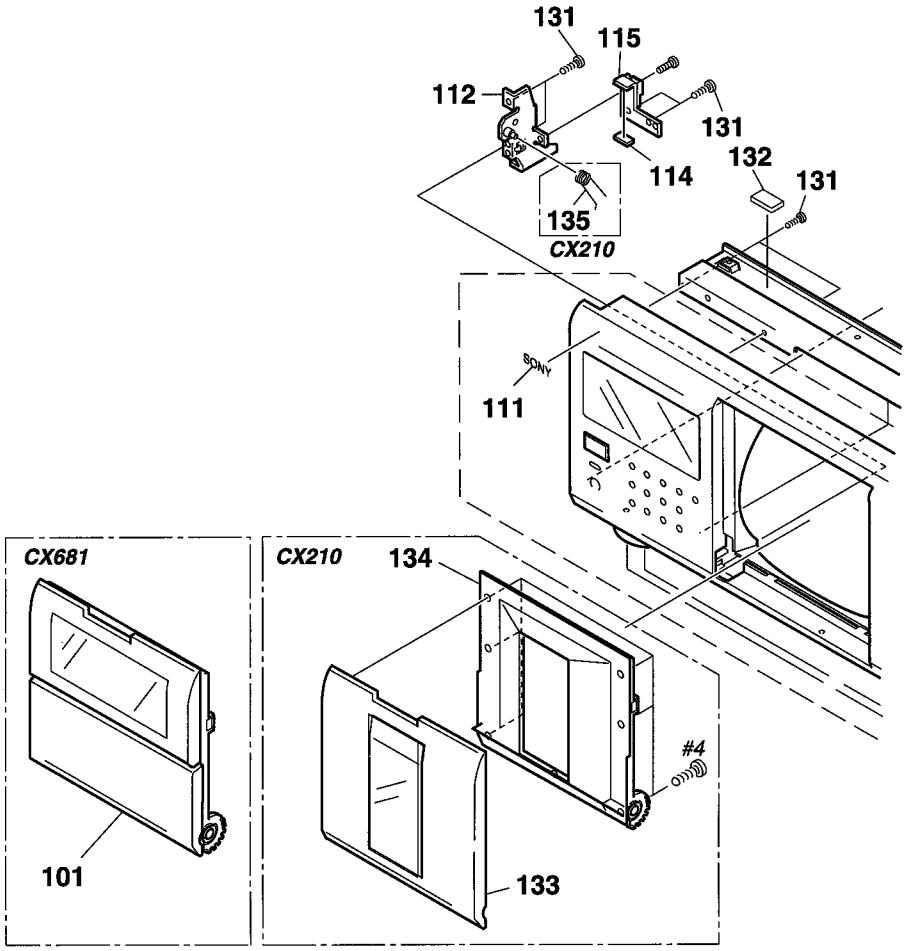
Page	Ref. No.	CDP-CX200 (US)			CDP-CX210/CX681		
		Part No.	Description	Remark	Part No.	Description	Remark
			*** EXPLODED VIEWS ***			*** EXPLODED VIEWS ***	
50	1	3-363-099-01	SCREW (CASE 3 TP2)		3-710-901-11	SCREW, TAPPING (CX205)	
					3-701-901-01	SCREW, TAPPING (CX681)	
	7	* 4-982-790-01	PANEL, BACK		* 4-900-213-01	PANEL, BACK (CX210:US)	
					* 4-900-213-11	PANEL, BACK (CX210:CND)	
					* 4-900-213-21	PANEL, BACK (CX681:US)	

COMPACT DISC PLAYER

MICROFILM

SONY®

Page	Ref. No.	CDP-CX200 (US)			CDP-CX210/CX681		
		Part No.	Description	Remark	Part No.	Description	Remark
52	101	X-4947-588-1	LID (200) ASSY		X-4948-429-1	LID (205) ASSY (CX681)	
						NOT USED (CX205)	
	108	X-4947-216-1	PANEL, ASSY, FRONT		X-4949-904-1	PANEL ASSY, FRONT (CX210)	
					X-4949-908-1	PANEL ASSY, FRONT (CX681)	
	133		NOT USED		X-4950-039-1	WINDOW (LID) ASSY (CX210)	
	134		NOT USED		4-983-370-01	LID (R)(CX210)	
	135		NOT USED		4-982-797-11	SPRING (A), TORSION (CX210)	
62		*** ACCESSORIES & PACKING MATERIALS ***			*** ACCESSORIES & PACKING MATERIALS ***		
		1-473-800-11	REMOTE COMMANDER (RM-DX200)			NOT USED (CX681)	
		3-856-765-21	MANUAL, INSTRUCTION (ENGLISH)		3-862-573-11	MANUAL, INSTRUCTION (ENGLISH)(CX210)	
					3-862-573-21	MANUAL, INSTRUCTION (FRENCH)(CX210:CND)	
					3-862-574-11	MANUAL, INSTRUCTION (ENGLISH)(CX681)	
		4-981-643-01	COVER, BATTERY (FOR RM-DX200)			NOT USED (CX681)	



CDP-CX200

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
PX Model

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-40
Base Unit Type	KSM-213BKN/M-N
Optical Pick-up Type	KSS-213B/S-N

SPECIFICATIONS

Compact disc player

Laser Semiconductor laser (λ = 780 nm)
Emission duration: continuous

Laser output Max 44.6 µW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.

Frequency response 20 Hz to 20 kHz ± 0.5 dB

Signal-to-noise ratio More than 100 dB

Dynamic range More than 98 dB

Harmonic distortion Less than 0.0045%

Channel separation More than 95 dB

Outputs

	Jack type	Maximum output level	Load impedance
LINE OUT	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms

General

Power requirements

Where purchased	Power requirements
USA, Canada	120V AC, 60Hz
Europe and Singapore	220V - 230V AC, 50Hz
E, PX	110 –120 V or 220 – 240 V AC, adjustable, 50/60 Hz
Australia	240V AC, 50Hz

Power consumption 13 W

Dimensions (approx.) (w/h/d) When the front cover is closed
430 × 200 × 480 mm (17 × 7 7/8 × 19 in.) incl. projecting parts
When the front cover is open
430 × 200 × 600 mm (17 × 7 7/8 × 23 5/8 in.) incl. projecting parts

Mass (approx.) 9.0 kg (19 lbs 14 oz)

Supplied accessories

Audio cord (2 phono plugs – 2 phono plugs) (1)
CONTROL A1 cord (1) (supplied for Canadian models only)
Remote commander (remote) (1)
Sony SUM-3 (NS) batteries (2)
CD booklet holders (2)
Label (1)

Design and specifications are subject to change without notice.

MICROFILM

COMPACT DISC PLAYER

SONY

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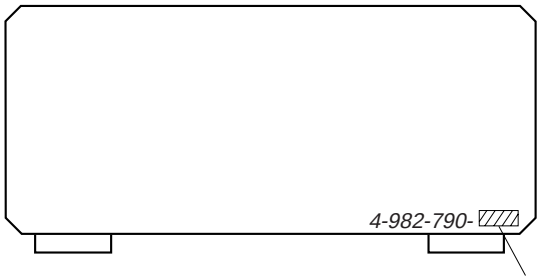
Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

MODEL IDENTIFICATION
— BACK PANEL —

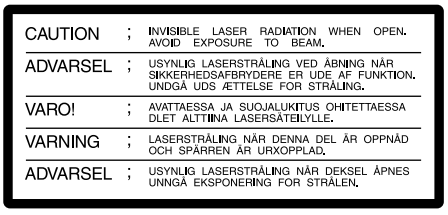


US Model	: 0☐
Canadian Model	: 1☐
AEP,German Model	: 2☐
UK Model	: 3☐
E,PX Model	: 4☐
Singapore Model	: 5☐
Austrarian Model	: 6☐

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

The laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

For the customers in Canada

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

SECTION 1
SERVICING NOTE

SAFETY CHECK-OUT
(US model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

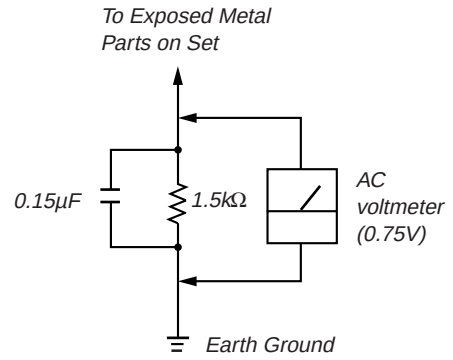


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output repeatedly.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

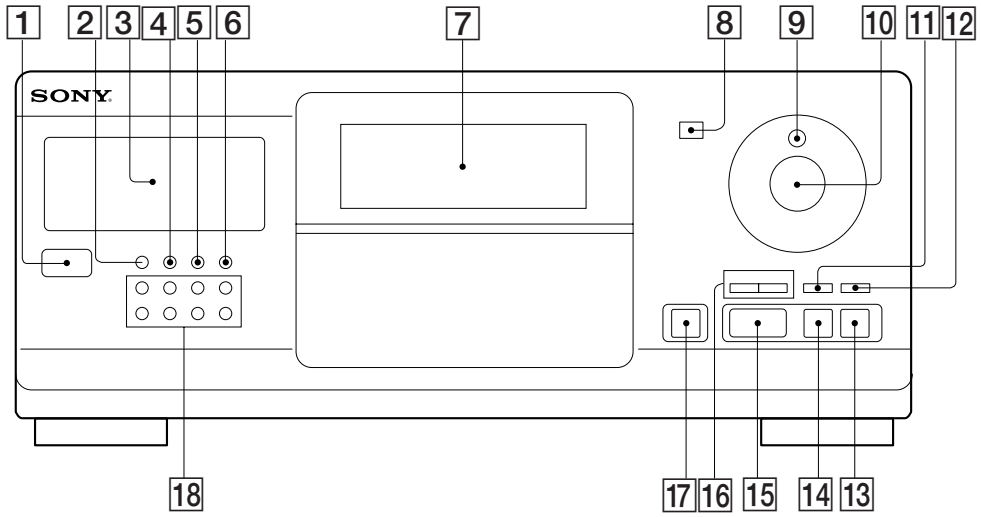
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 2
GENERAL

LOCATION OF PARTS AND CONTROLS

Front Panel



1 POWER button
2 CONTINUE button
3 Display window
4 SHUFFLE button
5 PROGRAM button
6 REPEAT button
7 Front cover
8 Remote sensor
9 JOG dial
10 ENTER button
11 CHECK button
12 CLEAR button
13 ■ (stop) button
14 ❚❚ (pause) button
15 ▷ (play) button
16 ⏮ AMS* ⏭ button
17 OPEN button
18 BLOCK 1-8 buttons

* AMS is the abbreviation for Automatic Music Sensor.

When to use the COMMAND MODE selector

The COMMAND MODE selector is set to CD1 at the factory for normal use. You can control this player by connecting to a Sony CD Player with the player control function, via the CONTROL A1 jacks. When making this connection, set the COMMAND MODE selectors of each player to the appropriate position according to the connected line input jacks. For details, refer to the instructions supplied with the connected player.

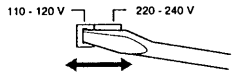
When using another Sony CD player together with this player

You can make the supplied remote effective only for this player.

- When using the player equipped with the COMMAND MODE selector:
  Set the COMMAND MODE selector of this player to CD1 and that of another player to CD2 or CD3. Then set the CD1/2/3 switch on the remote supplied for each player accordingly.
- When using the player not equipped with the COMMAND MODE selector:
  The command mode of the player without the COMMAND MODE selector is set to CD1. Set the COMMAND MODE selector of this player to CD2, and set the CD1/2/3 switch on the remote to CD2.

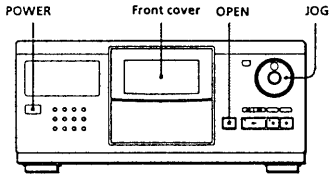
Setting the VOLTAGE SELECTOR (for E, PX models)

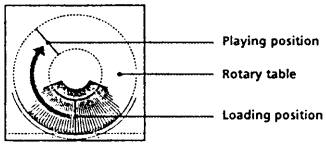
Check that the VOLTAGE SELECTOR on the rear panel of the player is set to the local power line voltage. If not, set the selector to the correct position using a screwdriver before connecting the AC power cord to a wall outlet.



Inserting CDs

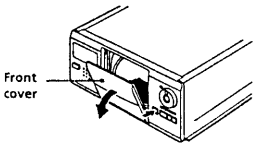
You can insert up to 200 discs into this player.



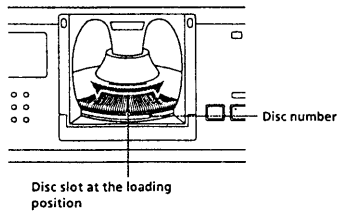


1 Press POWER to turn on the player.

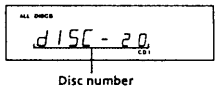
2 Press OPEN.



3 Turn the JOG dial until you find the disc slot where you want to insert a disc, while checking the disc number (written beside every five slots and also indicated in the display).



The disc number at the loading position appears in the display.* As you turn the JOG dial, the disc number changes.



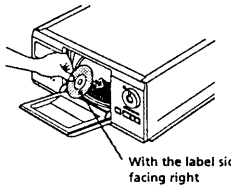
You can arrange your discs into groups and play them within a certain group using the Block Play function. When using this function, you have to insert discs into the slots assigned to one of the eight groups. For details, see "Playing Discs in a Group" on page 15.

* If you have already inserted discs, the disc number at the playing position appears. When you turn the JOG dial, the displayed disc number changes to the one at the loading position.

4 Insert a disc with the label side facing right.

Notes

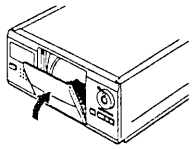
- Make sure you have inserted the disc into each slot at a right angle to the rotary table. If the disc is not put in straight, it may damage the player or the disc.
- Make sure the rotary table comes to a complete stop before inserting or removing discs.



5 Repeat Steps 3 and 4 to insert more discs.

This section is extracted from instruction manual.

6 Close the front cover by pressing the right edge of the cover until it clicks.



The rotary table turns and the disc slot at the loading position is set to the playing position. Always close the front cover except when you insert or remove discs.

The supplied CD booklet holders help you locate a disc

You can store up to 200 CD booklets. Insert booklets and stick the number label on the film of a pocket and the booklet so that you can locate the disc easily.

Notes

- When you insert an 8 cm (3-inch) CD, be sure to attach a Sony CSA-8 adaptor (not supplied) to the disc.
  Do not insert an empty 8 cm (3-inch) CD adaptor (CSA-8). It may damage the player.
- **Do not attach anything such as seals or sleeves to CDs. It may damage the player or the disc.**
- If you drop a disc into the player and the CD won't go into the slot correctly, consult your nearest Sony dealer.
- When transporting the player, remove all discs from the player.

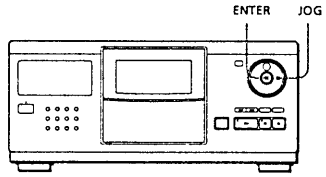
Removing CDs

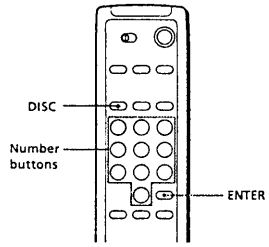
After following Steps 1 to 3 of "Inserting CDs" on page 6, remove the discs. Then close the front cover.

Note

The disc being played does not come to the loading position if you open the front cover during playback. (The disc number flashes in the display.)
If you want to remove the disc being played, press ENTER in the center of the JOG dial after opening the front cover. The disc comes to the loading position. Remove the disc after the rotary table comes to a complete stop.

Locating a Specific Disc





Selecting a disc on the player

Turn the JOG dial until the disc number you want appears in the display. Press ENTER to start play.

Selecting a disc directly using the remote

1 Press DISC.

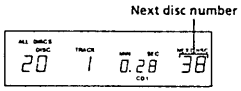
2 Press the number button of the disc.
Example: To enter number 35
Press 3, then 5.
To enter number 100
Press 1, then 0 twice.

3 Press ENTER to start play.

Specifying the Next Disc to Play

You can specify the next disc to play while playing a disc in Continuous or 1 DISC Shuffle Play mode.

While playing a disc, turn the JOG dial until the disc number you want appears in the display.



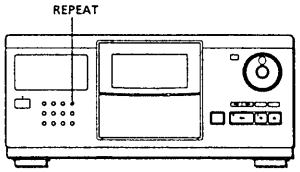
After the current disc is played, the next disc you have specified starts playing.
If you want to skip to the next disc right away, press ENTER while playing the current disc.

To cancel the disc you have specified

Press CONTINUE twice.

Playing Repeatedly

You can play discs/tracks repeatedly in any play mode.



Press REPEAT while playing a disc.
"REPEAT" appears in the display. The player repeats the discs/tracks as follows:

When the disc is played in	The player repeats
ALL DISCS Continuous Play (page 8)	All tracks on all discs
1 DISC Continuous Play (page 8)	All tracks on the current disc
ALL DISCS Shuffle Play (page 12)	The player does not repeat discs/tracks but keeps shuffling until you stop play whether or not you press REPEAT.
1 DISC Shuffle Play (page 12)	All tracks on the current disc in random order
Program Play (page 13)	The same program

To cancel Repeat Play
Press REPEAT repeatedly until "REPEAT" disappears from the display.

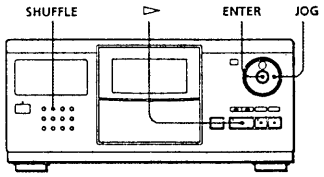
Repeating the current track

You can repeat only the current track.

While the track you want is being played, press REPEAT repeatedly until "REPEAT 1" appears in the display.

Playing in Random Order (Shuffle Play)

You can have the player "shuffle" the tracks and play in random order. The player shuffles all the tracks on all discs or on the disc you specified.



1 Press SHUFFLE to select ALL DISCS or 1 DISC Shuffle Play mode.
Each time you press SHUFFLE, "ALL DISCS" or "1 DISC" appears in the display.

When you select	The player plays
ALL DISCS	All tracks on all discs in random order. The player keeps shuffling tracks until you stop play.*
1 DISC	All tracks on the specific disc in random order

* The player may play the same track more than once.

2 When you want to specify the disc for 1 DISC Shuffle Play, turn the JOG dial until the disc number you want appears in the display.

3 Press ENTER or ▷.
ALL DISCS or 1 DISC Shuffle Play starts.
"[ ]" appears in the display while the player is "shuffling" the discs or the tracks.

To cancel Shuffle Play
Press CONTINUE.

You can start Shuffle Play while playing
Press SHUFFLE, and Shuffle Play starts from the current track.

You can directly select a disc for 1 DISC Shuffle Play
See "Selecting a disc directly using the remote" on page 10.

You can go to the next disc during 1 DISC Shuffle Play
Press DISC SKIP +.

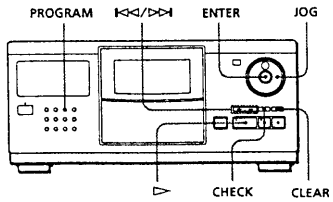
You can specify the next disc to play during 1 DISC Shuffle Play
Turn the JOG dial to specify the next disc. After all the tracks on the current disc are played in random order, the next disc starts playing. If you want to skip to the next disc right away, press ENTER while playing the current disc.

Note
You cannot specify the next disc to play during ALL DISCS Shuffle Play.

Creating Your Own Program (Program Play)

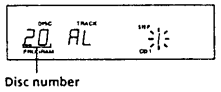
You can arrange the order of the tracks and/or discs to create your own program and the program is stored automatically. A program can contain up to 32 "steps" — one "step" may contain a track or a whole disc. You can make a program using the controls on the remote as well as ones on the player. However, the programming procedures are different.

Creating a program on the player

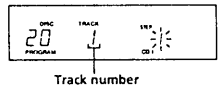


1 Press PROGRAM.
If a program is already stored, the last step of the program appears in the display. When you want to erase the whole program, hold down CLEAR until "All Clr" appears in the display (see page 14).

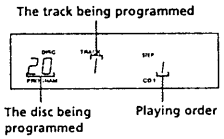
2 Turn the JOG dial until the disc number you want appears in the display.



3 To program a whole disc, skip this step. Press I◁◁/▷▷I until the track number you want appears in the display.



4 Press ENTER or PROGRAM.



5 To program other discs/tracks, do the following:

To program	Repeat Steps
Other discs	2 and 4
Other tracks on the same disc	3 and 4
Other tracks on other discs	2 to 4

6 Press ▷ to start Program Play.

To cancel Program Play
Press CONTINUE.

The program remains even after Program Play ends
When you press ▷, you can play the same program again.

When you press PROGRAM during Continuous or Shuffle Play
The program will be played after the current track.

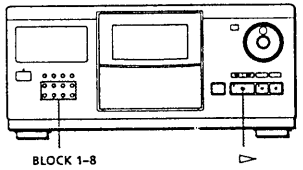
The program remains until you erase them
If you replace discs, the programmed disc and track numbers remain. So, the player plays only the existing disc and track numbers. However, the disc and track numbers that are not found in the player or on the disc are deleted from the program, and the rest of the program is played in the programmed order.

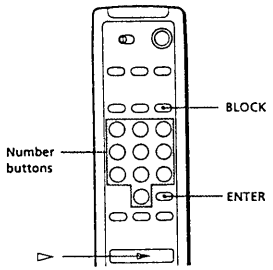
Playing Discs in a Group (Block Play)

You can classify discs in advance by artists, category, etc. when inserting discs into the slots, and play them only within the group (called "block") you specified. The player has eight blocks, and each slot is assigned to one of the blocks as shown below.

Block number	Disc slot
1	1–25
2	26–50
3	51–75
4	76–100
5	101–125
6	126–150
7	151–175
8	176–200

You can enjoy Continuous, Shuffle or Repeat Play within a certain block.





1 Insert discs into the slot of the block you want, referring to the table above. (See also "Inserting Discs" on page 6.)

2 Press one of the BLOCK 1–8 buttons to select the block.
When using the remote, press BLOCK, the number button of the block you want, then ENTER.
The block number appears in the display.

3 Press ▷.
Block Play starts from the disc which is the most upward number within a block and located closest to the playing position.

You can start Block Play from the disc you want
When you want to start Block Play from the disc you want, turn the JOG dial to select the disc, then press ENTER.

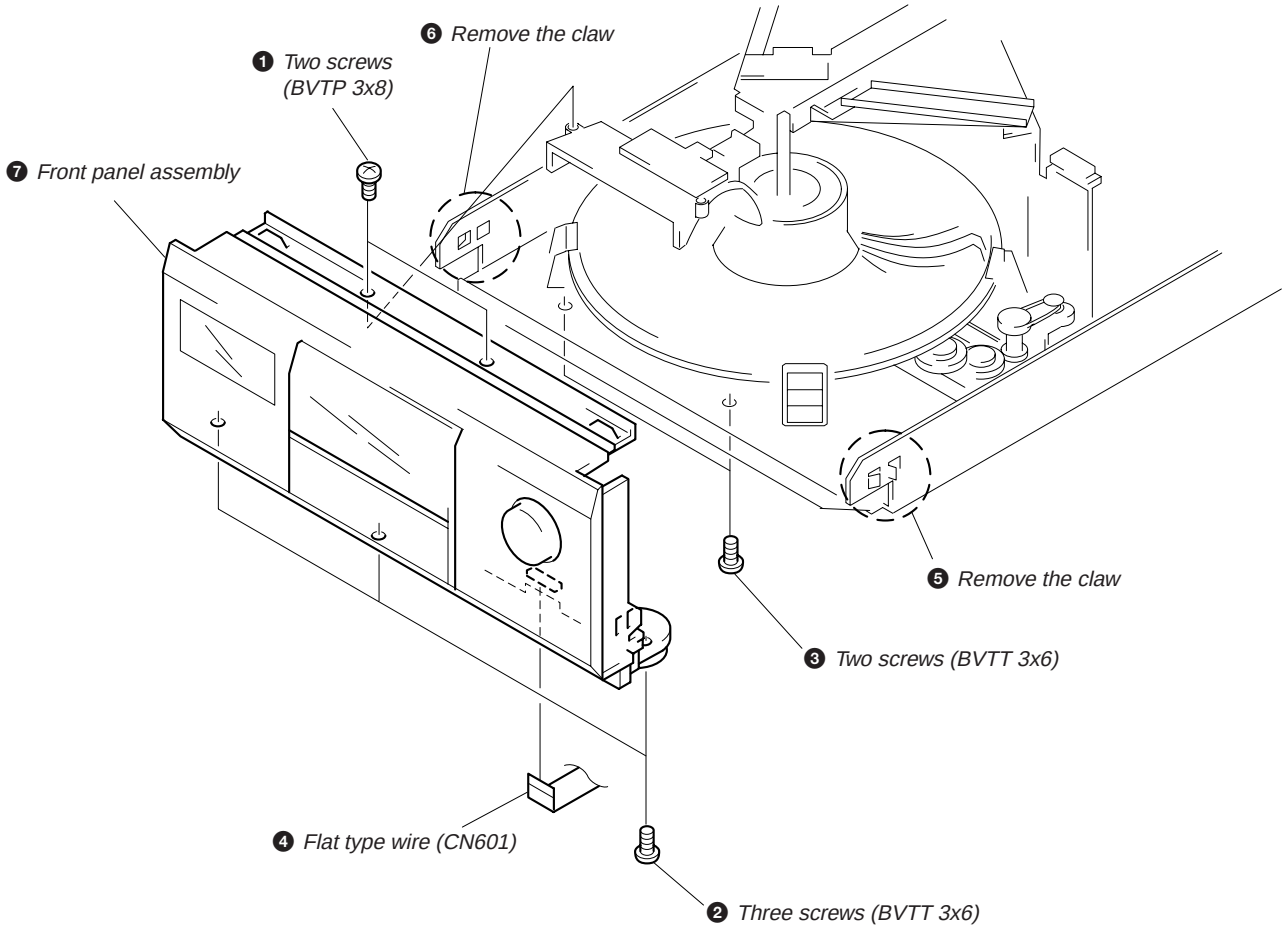
To cancel Block Play
Press the corresponding BLOCK 1–8 button.

Note
The block number does not appear if no disc is put into the block you specified.

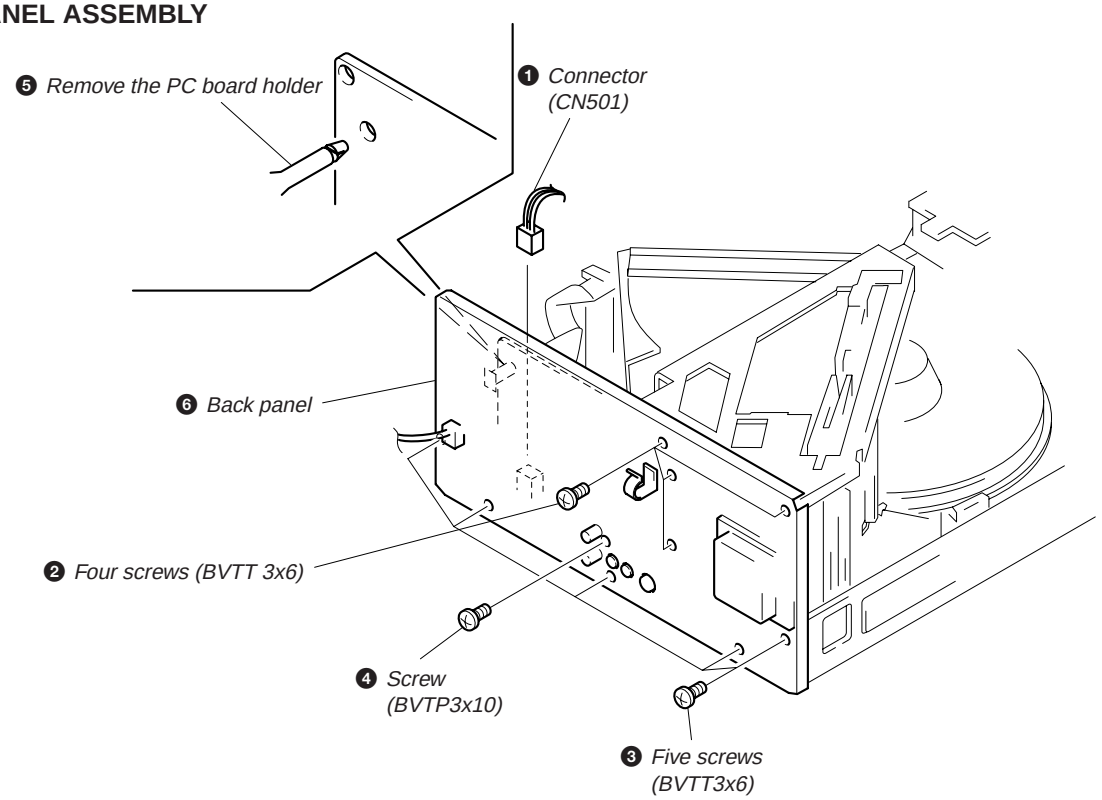
SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

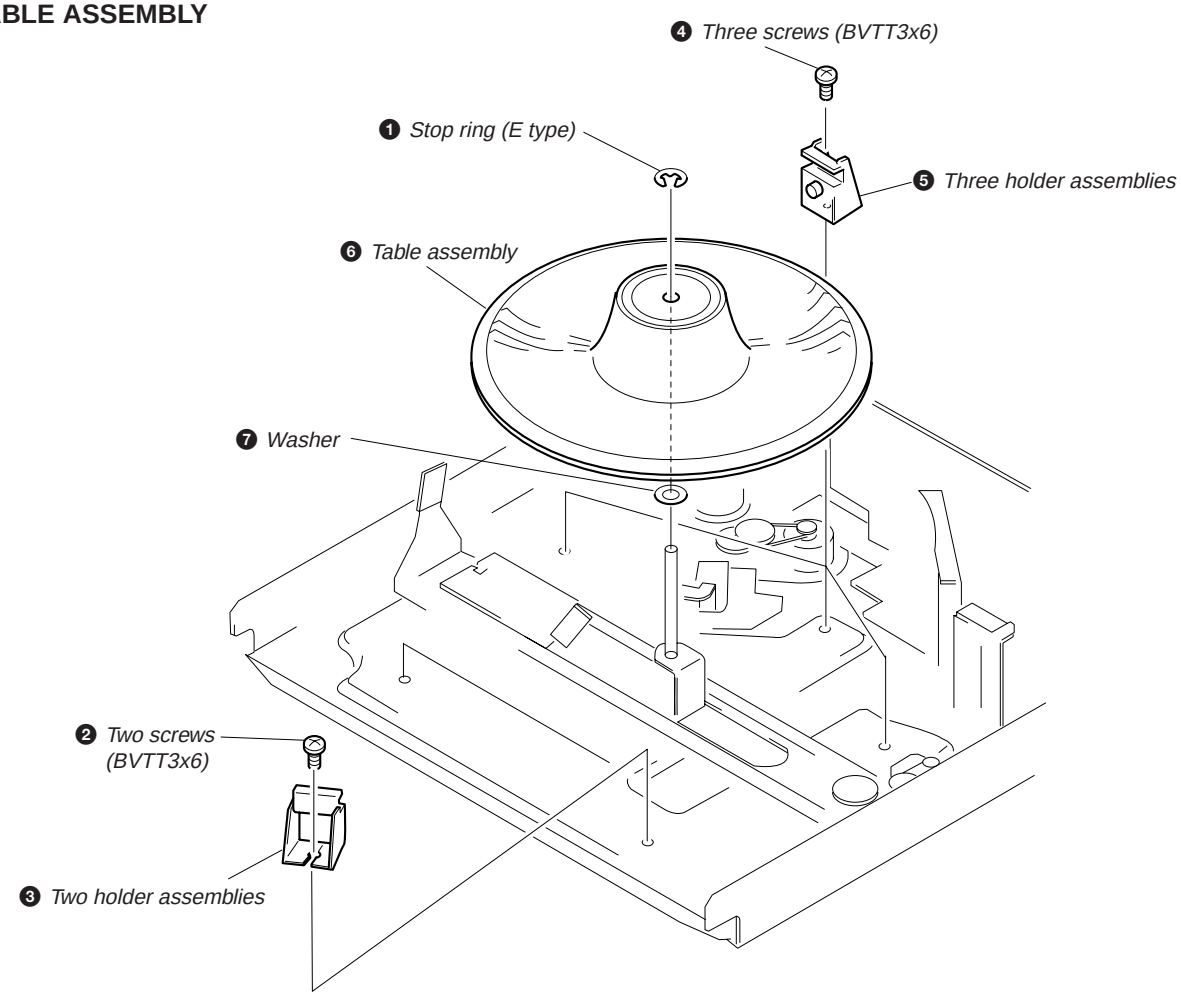
3-1. FRONT PANEL ASSEMBLY


❻ Remove the claw
❶ Two screws (BVTP 3x8)
❼ Front panel assembly
❺ Remove the claw
❸ Two screws (BVTT 3x6)
❹ Flat type wire (CN601)
❷ Three screws (BVTT 3x6)

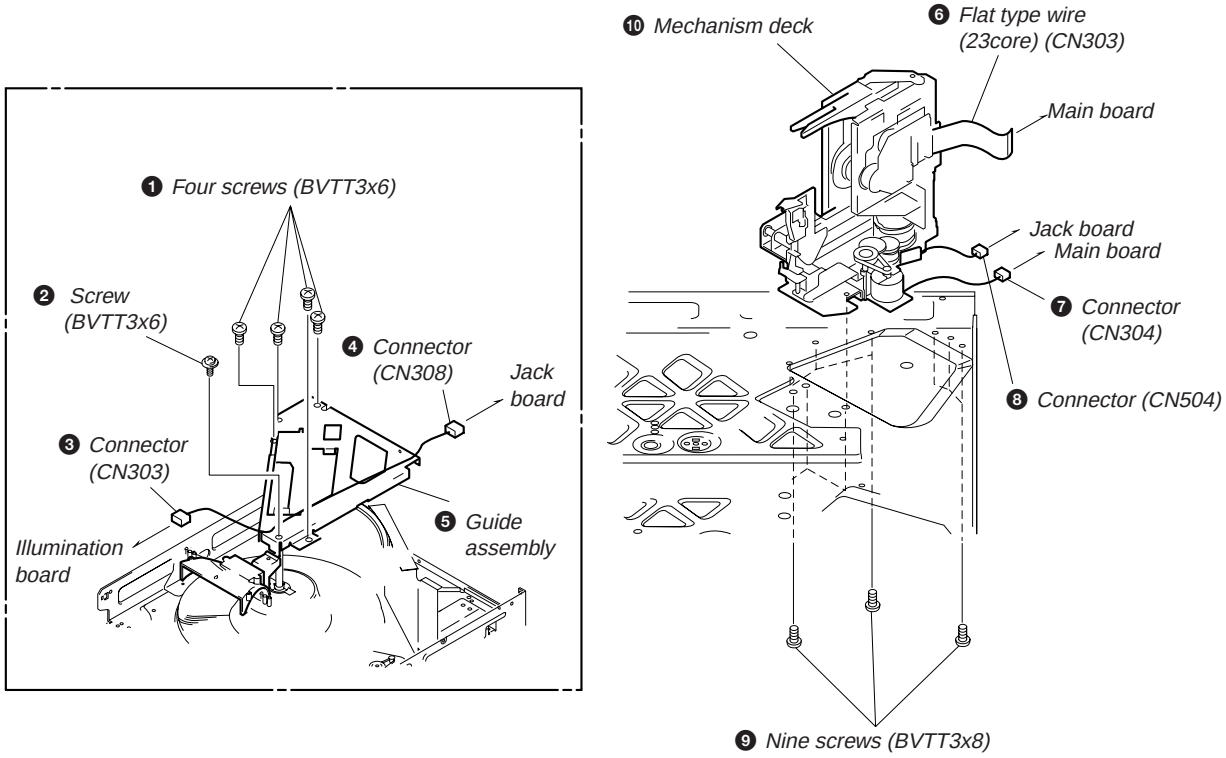
3-2. BACK PANEL ASSEMBLY



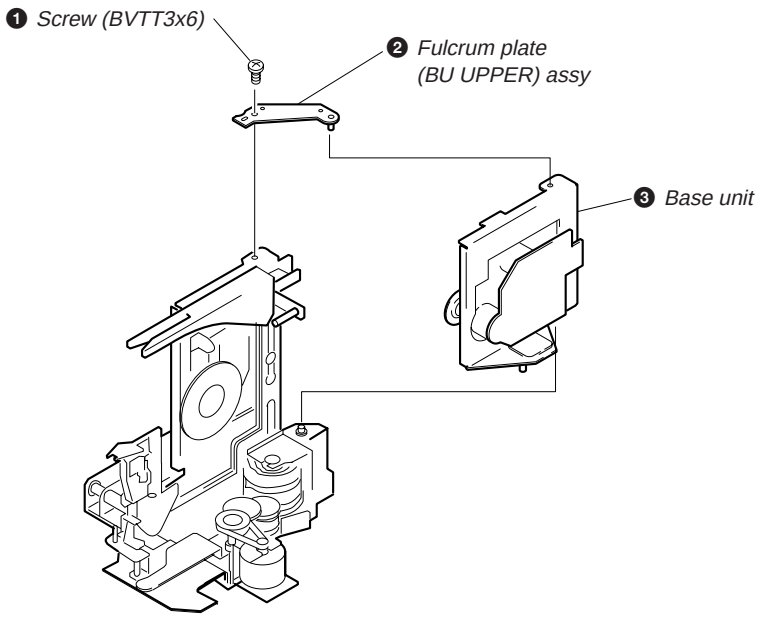
3-3. TABLE ASSEMBLY



3-4. MECHANISM DECK ASSEMBLY



3-5. BASE UNIT ASSEMBLY



SECTION 4
TEST MODE

4-1. Display Check Mode

With the power turned off (standby state), press the POWER button while pressing the ❚❚ (pause) button.
All FL segments and grids light up together with the ▷ (play), ❚❚ (pause), and standby LEDs.
At the same time, the GROUP LEDs are scanned one by one.

Note: To exit this mode, press the POWER button.

4-2. ADJ Mode

1. Turn ON the power of the unit, set disc to disc table, and perform chucking.
2. Disconnect the power supply plug from the outlet.
3. To set ADJ mode, connect the test point (TP301:ADJ) of the MAIN board to Ground, and turn on the power supply plug to the outlet.

The power will turn on automatically, and the first track will be played. In this mode, table rotation and loading operations are not performed because it is taken that the disc has already been chucked.

Note: The same operations are also performed in the following when the test point (TP301:ADJ) is connected to Ground after turning on the power.

- Direct search (movement of sledding motor) is not performed during accessing
- Ignored even when GFS becomes L
- Ignored even when the Q data cannot be read
- Focus gain does not decrease
- Spindle gain does not decrease
- Servo related settings can be set manually and checked (Refer to ADJ Mode Special Functions Table)

ADJ Mode Special Functions Table
(The buttons shown with ( ) function by using the supplied remote commander only)

Button	Function
CONTINUE	Servo average display Displays VC, FE, RF, TE and traverse in hexadecimal numbers
SHUFFLE	Focus bias display Each time this is pressed, the focus bias is switched between 1 and 2 (1) Bias actually set Optimum bias Minimum jitter (2) U:Upper aliasing bias L:Lower aliasing bias
PROGRAM	Auto gain display Displays focus, tracking, sledding in hexadecimal numbers
BLOCK 1 (1)	Increases the focus bias in 8 steps.
BLOCK 2 (2)	Sets the focus bias in the middle of aliasing.
BLOCK 3 (3)	Turns off the tracking and sledding servo
BLOCK 4 (4)	Returns the auto gain to the initial value (30)
BLOCK 5 (5)	Turns off the focus servo
BLOCK 6 (6)	Decreases the focus bias in 8 steps.
BLOCK 7 (7)	Re-adjusts the focus bias
BLOCK 8 (8)	Turns on the tracking and sledding servo
(9)	Switches the focus servo gain between normal and down 08: normal, 0C: down
(10/0)	Sets the focus bias to 0 (no bias) Next, displays the jitter measured at the focus bias set
CHECK	S-curve observation mode
CLEAR	Automatic eccentric measurement The results of measurement is displayed in µm directly.

4-3. Key and Display Check Mode

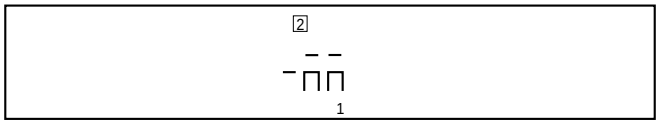
To set this mode, connect the test point (TP302:AFADJ) on the MAIN board to Ground, and turn on the power supply plug to the outlet.

- All FL segments and grids will light up. (All lit check)
  When a button is pressed, the types of buttons pressed until then will be displayed on the left side and the number of the buttons will be displayed on the right side. However, these will not be displayed for the following special buttons.

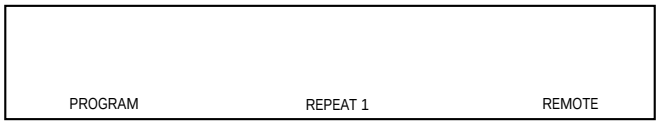
■(stop) button: FL segment check
(Refer to FL Tube Check Patterns)
❚❚(pause) button: FL grid check (Refer to FL Tube Check Patterns)
The pause LED also lights up simultaneously.
▷(play) button: All FL segment and grid will light up
The play LED also lights up simultaneously.

FL Tube Check Patterns

Segment check



Grid check

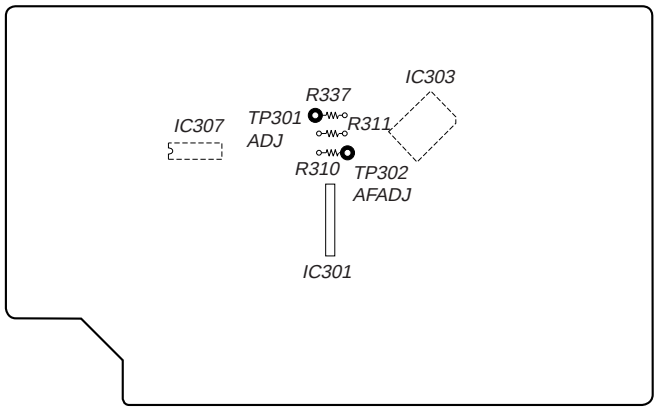


- When the jog dial is rotated to the right, the Block indicators of FL light up in the order of 1→2..8→1.
- When the jog dial is rotated to the left, the Block indicators of FL light up in the order of 8→7..1→8.

- The standby LED lights up when the door switch is shut.

- Abbreviation
  FL: Fluorescent Indicator Tube

[MAIN BOARD] — Component Side —

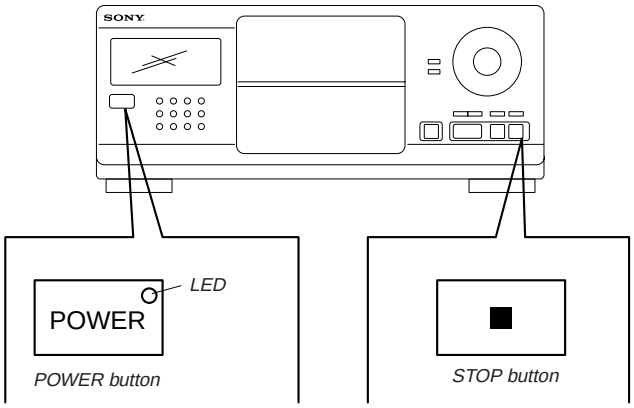


SECTION 5
ADJUSTMENTS

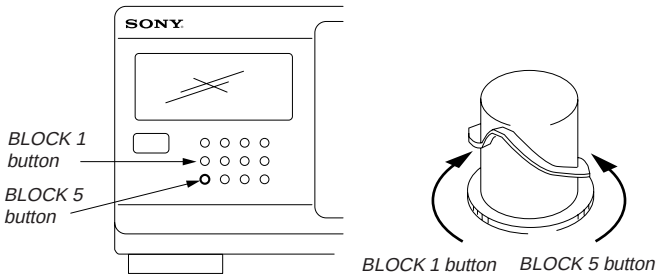
5-1. MECHANICAL ADJUSTMENT

Perform the following steps before carrying out adjustments.

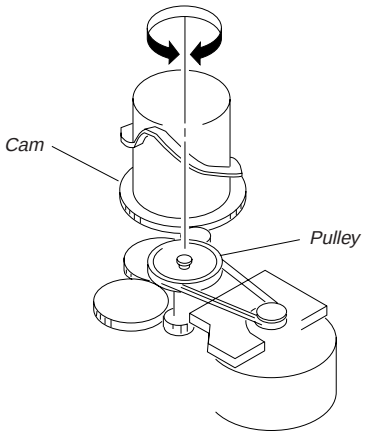
1. Turn ON the power of the unit, set disc to disc table No. 92, and perform chucking.
2. Turn OFF the power.
3. Remove the case.
4. While pressing the STOP button, turn ON the POWER button. The test mode is set.
5. The POWER button LED starts blinking. (Test mode)



NOTE 1: The cam will start rotating when the BLOCK 1 or BLOCK 5 button is pressed continuously in the test mode.

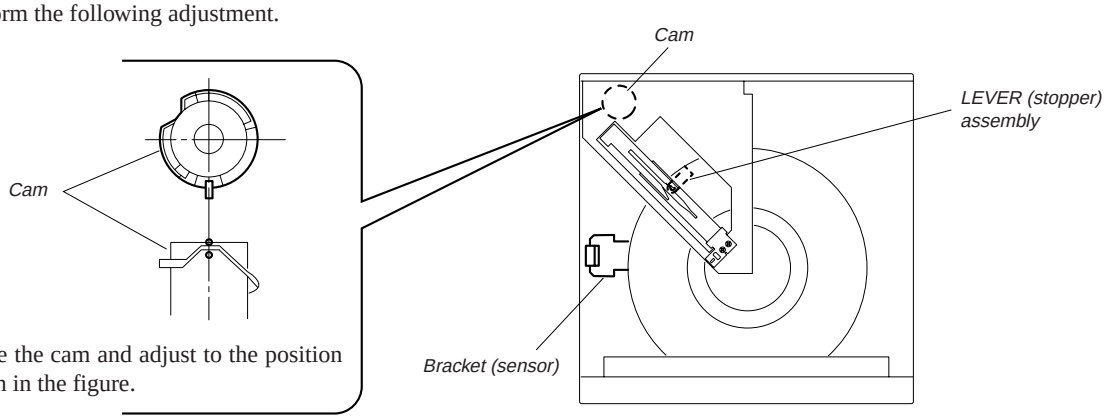


NOTE 2: If the power cannot be supplied, the cam can be rotated by rotating the pulley with your finger.



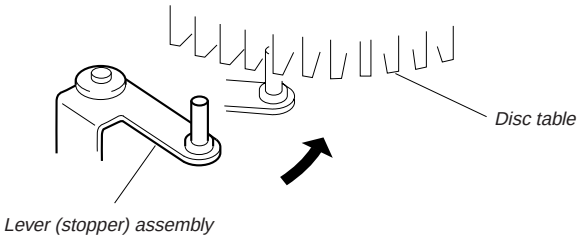
SENSOR ALIGNMENT

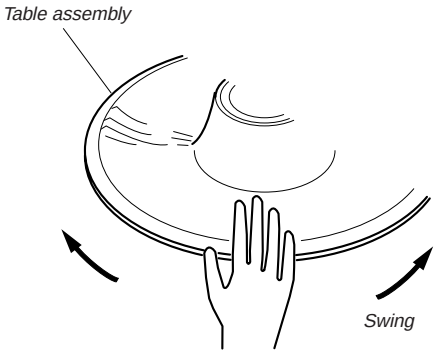
If the disc table swings to the left and right just before the disc is chucked, perform the following adjustment.



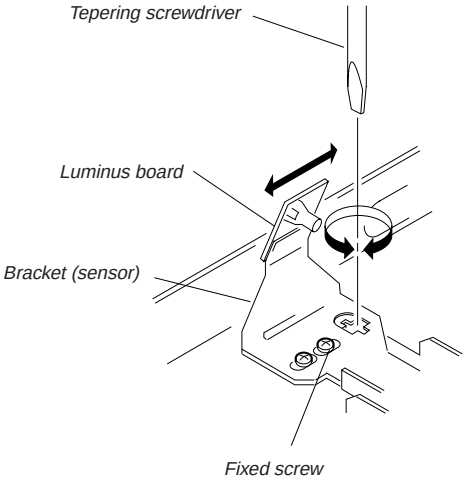
(1) Rotate the cam and adjust to the position shown in the figure.

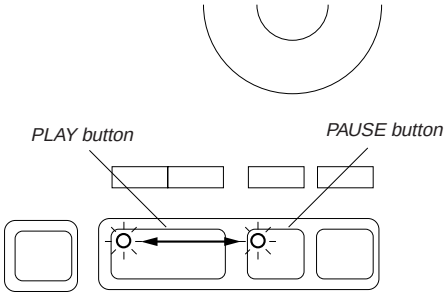
(2) Check that the lever (stopper) assembly secures the disc table as shown in the figure.





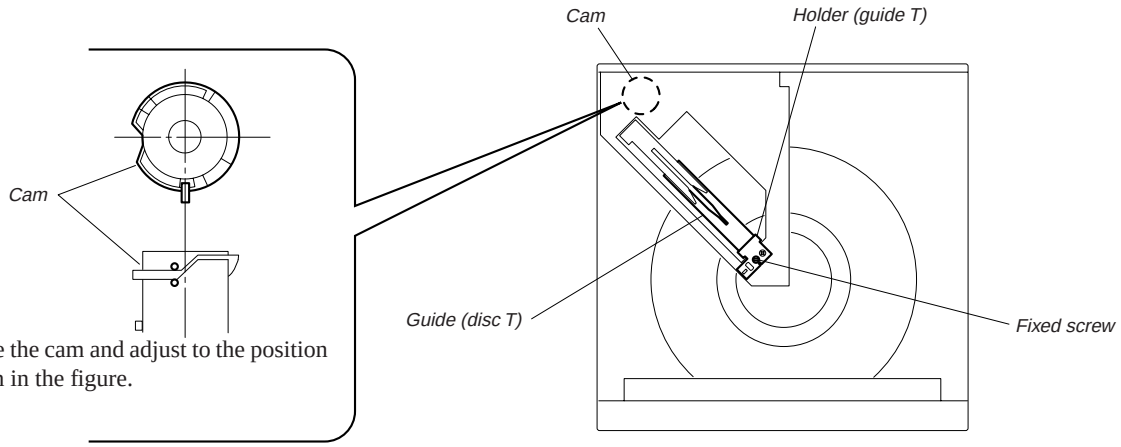
(4) Moving the disc table right and left with a hand after the screw is fixed, the table will move by the play of a disc table. If the LEDs light up alternately, the adjustment will be performed correctly)



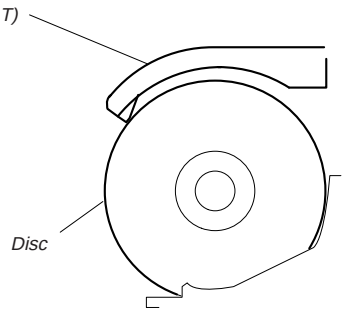


(3) Loosen the fixed screw by 60° to 90°, and use a tapering screwdriver to adjust the screw as shown in the figure.
Move the bracket (sensor) with the tapering screwdriver little by little, and fix the fixed at where the paly botton's LED (green) is switched to the pause button's LED (orange) (or its reverse).

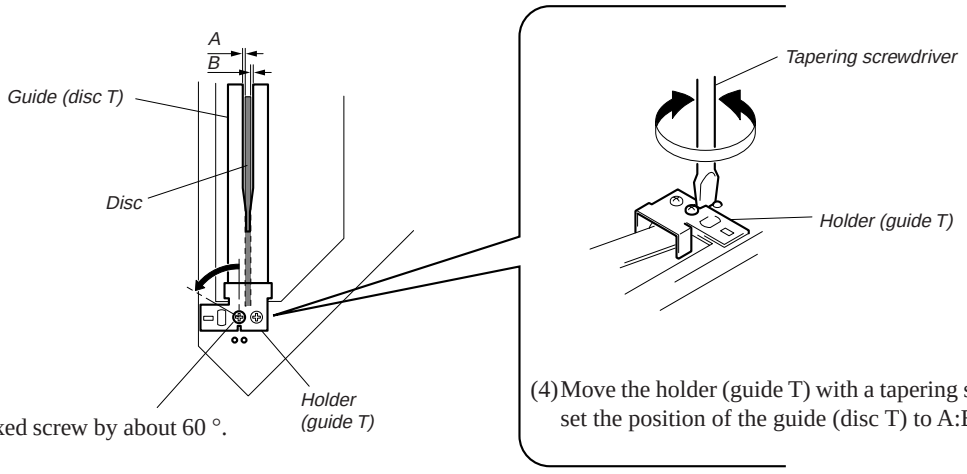
GUIDE (DISC T) ALIGNMENT



(1) Rotate the cam and adjust to the position shown in the figure.



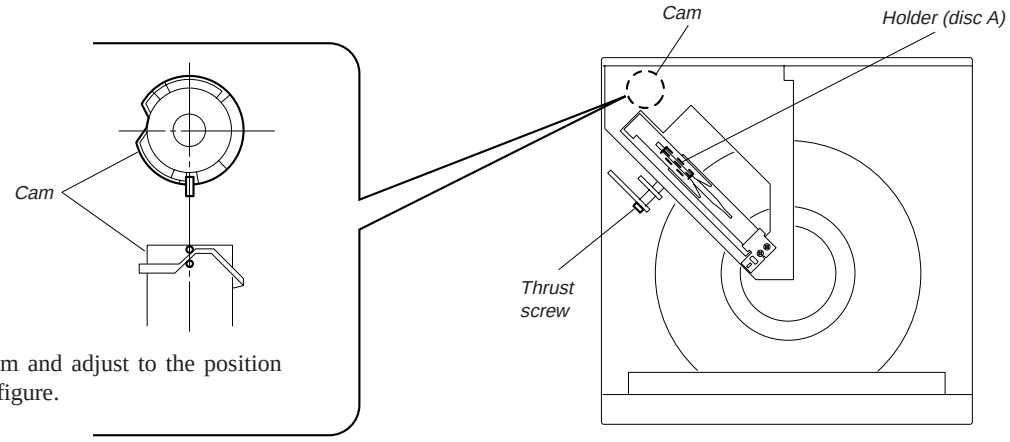
(2) Check that the state is as shown in the figure.



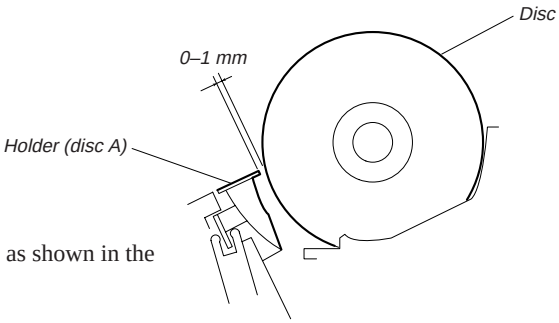
(3) Loosen the fixed screw by about 60 °.

(4) Move the holder (guide T) with a tapering screwdriver, and set the position of the guide (disc T) to A:B=1:1.

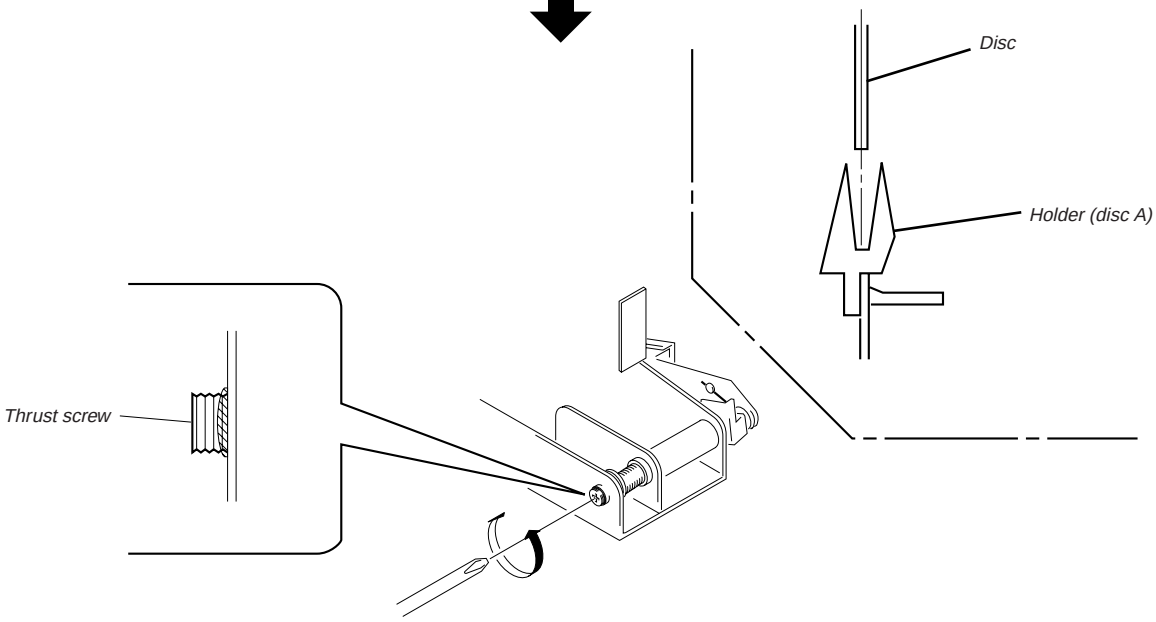
HOLDER (DISC A) ALIGNMENT



(1) Rotate the cam and adjust to the position shown in the figure.

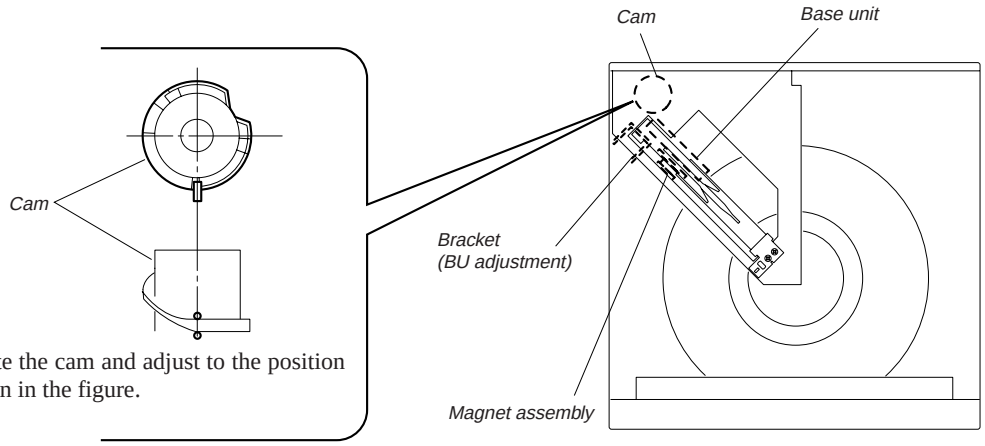


(2) Check that the state is as shown in the figure.



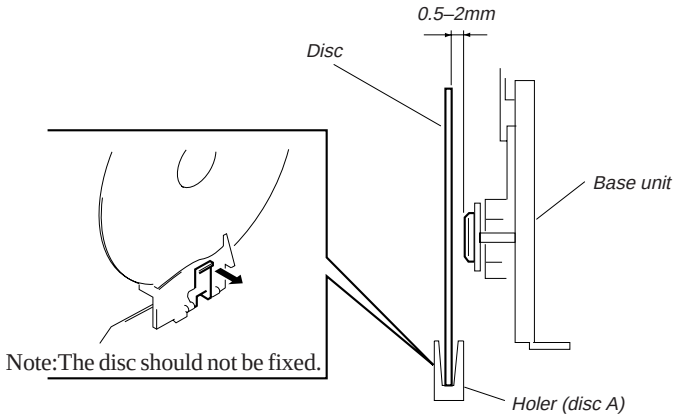
(3) After applying screw-lock to the ▨ part, rotate the thrust screw until the holder (Disc A) comes to the center of the disc.

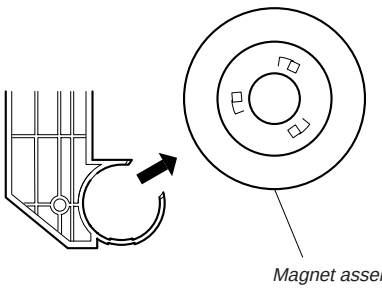
PULLY AND DISC CENTER HOLE ALIGNMENT



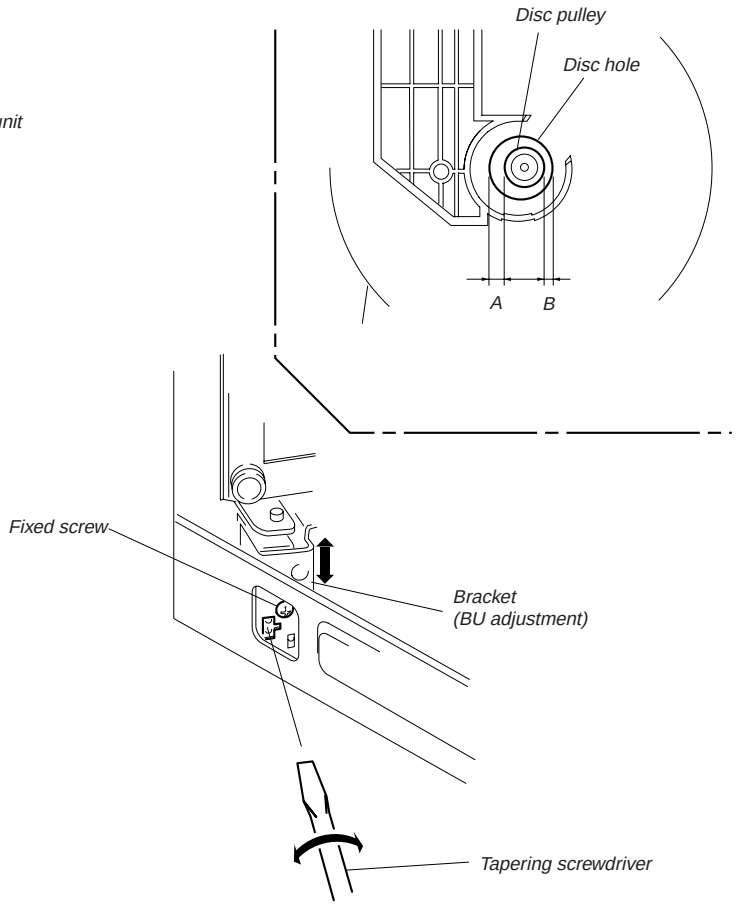
(1) Rotate the cam and adjust to the position shown in the figure.

(2) Check that the state is as shown in the figure.



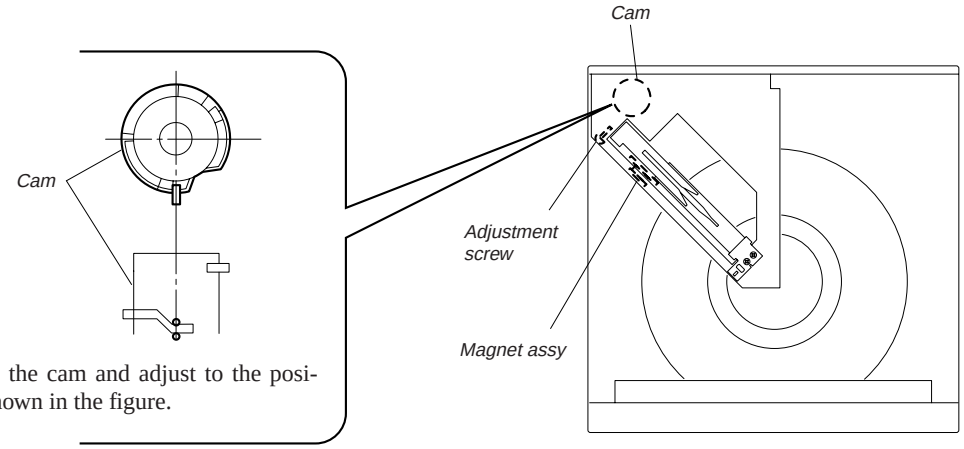


(3) Remove the Magnet assembly.

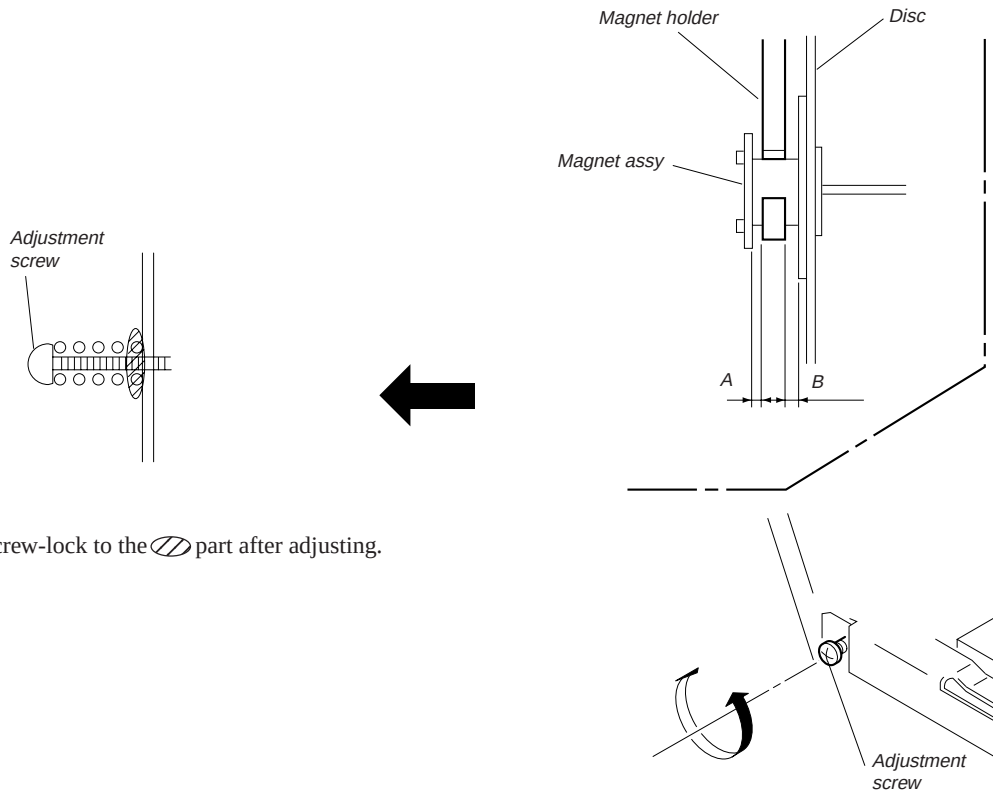


Loosen the fixed screw by 60° to 90°, and move and adjust the bracket (BU adjustment) up and down using a tapering screwdriver so that the positions of the disc hole and disc pulley become A=B or between A:B=2:1 and 1:2.

MAGNET ASSY ALIGNMENT



(1) Rotate the cam and adjust to the position shown in the figure.



(2) Rotate the adjustment screw until A=B or between A:B=2:1 and 1:2

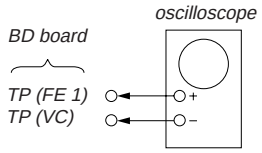
(3) Apply screw-lock to the ▨ part after adjusting.

5-2. ELECTRICAL BLOCK CHECKING

Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

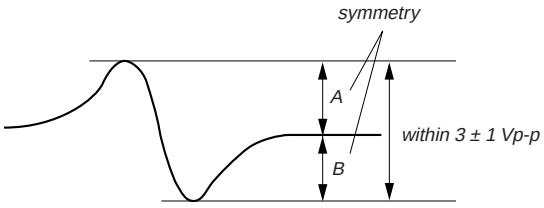
S-Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FE 1) on BD board.
2. Connect test point TP301 (ADJ) on MAIN board to ground with lead wire.
3. Turn Power switch on to set the ADJ mode.
4. Put disc (YEDS-18) in and playback.
   Press the CHECK button.
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1 Vp-p.

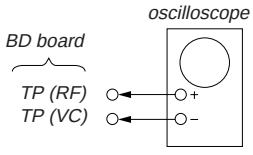
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

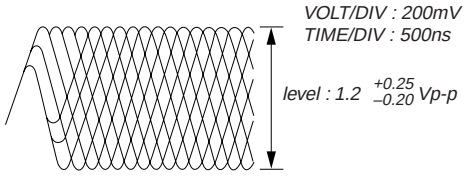


Procedure :

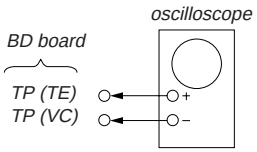
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: A clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform



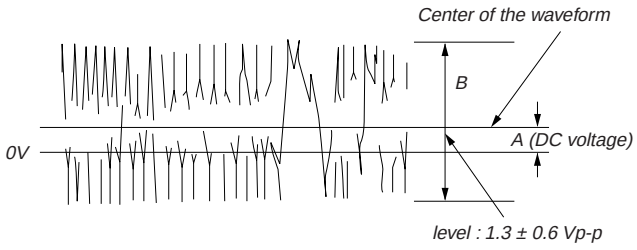
E-F Balance Check



Procedure :

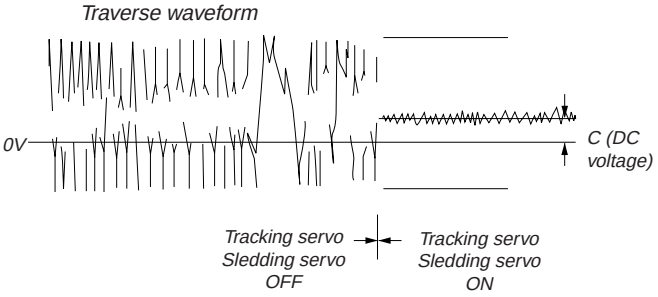
1. Connect oscilloscpe to test point TP (TE) on BD board.
2. Connect the test point TP301 (ADJ) on MAIN board to the ground with a lead wire.
3. Turn the Power switch on to set the ADJ mode.
4. Put disc (YEDS-18) in to play the number five track.
5. Press the "BLOCK3" button. (The tracking servo and the sledding servo are turned OFF.)
6. Check the level B of the oscilliscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following :
   A/B x 100 = less than ± 22%

Traverse waveform



7. Press the "BLOCK 8" button. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 6.

Traverse waveform

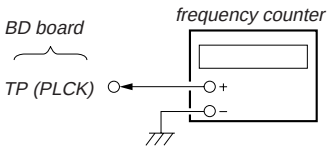


8. Disconnect the lead wire of TP301 (ADJ) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

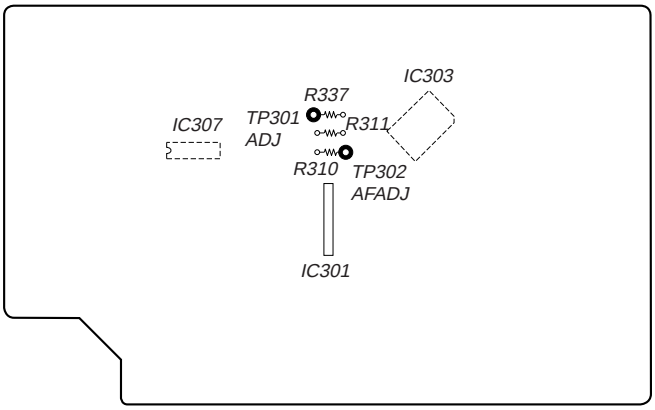
1. Connect frequency counter to test point TP (PLCK) with lead wire.



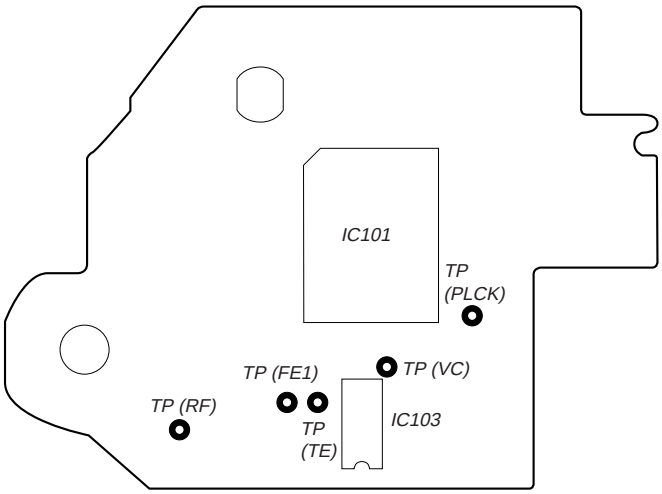
2. Turn Power switch on.
3. Put the disc (YEDS-18) in to play the number five track.
   Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

[MAIN BOARD] — Component Side —

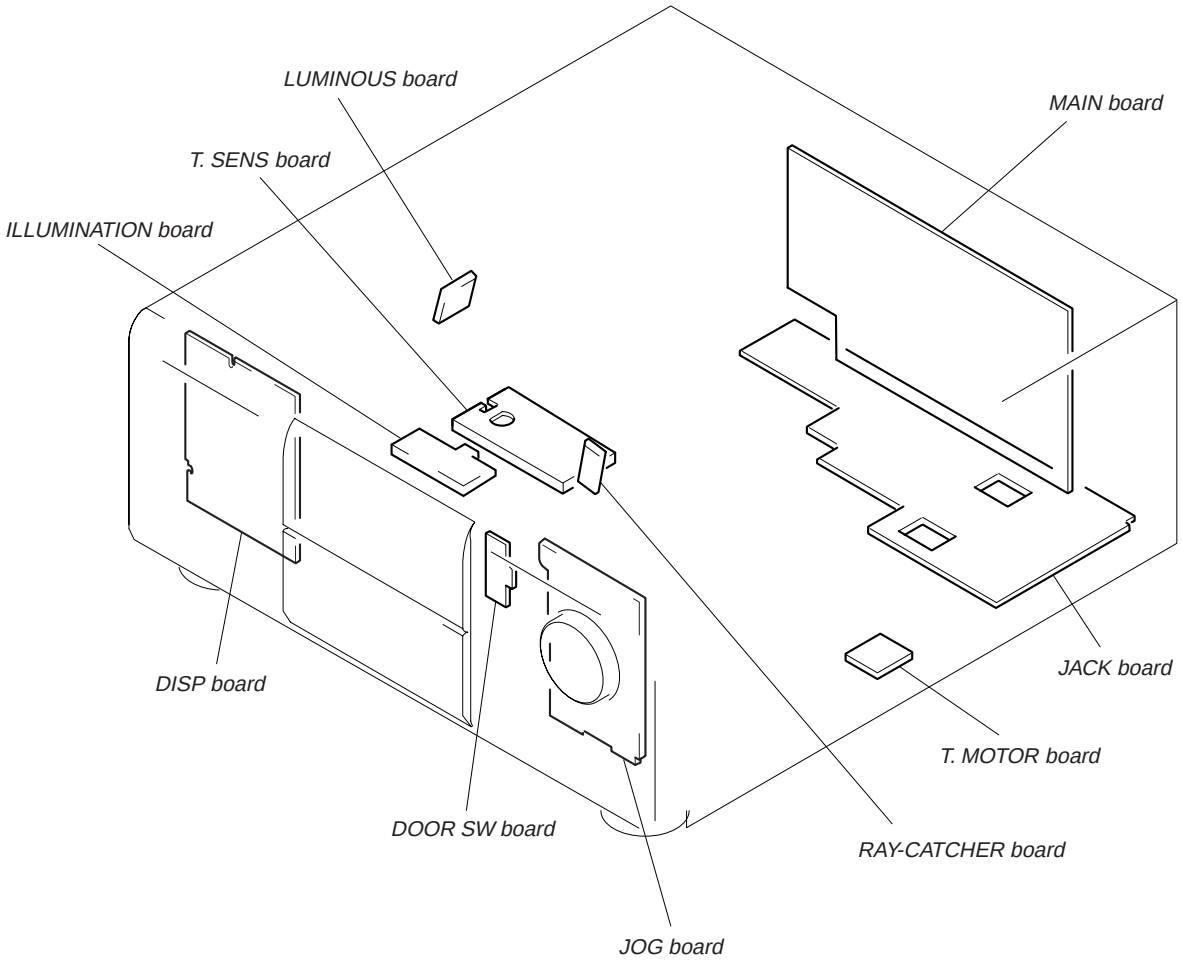


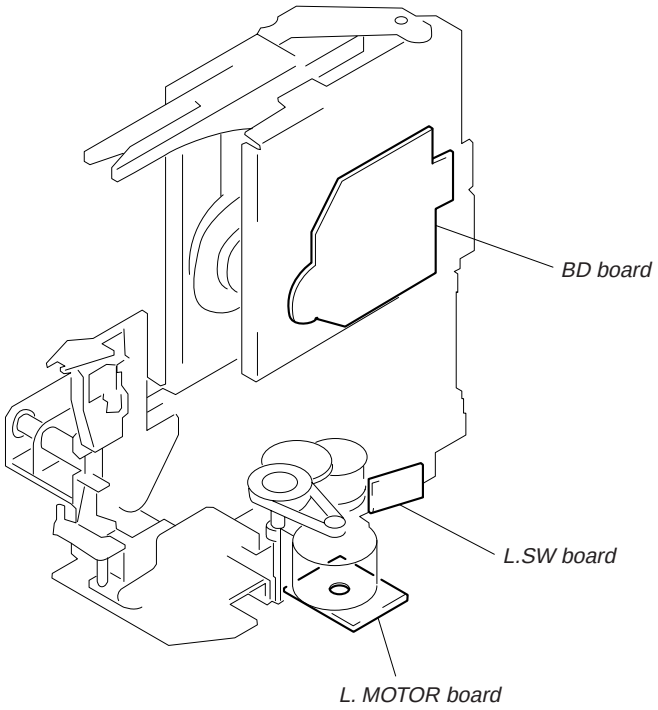
[BD BOARD] — Side B —



SECTION 6
DIAGRAMS

6-1. CIRCUIT BOARDS LOCATION





6-2. IC PIN FUNCTIONS

• **IC101 DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR (CXD2545Q)**

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Open)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Open)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Open)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Open)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Open)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Open)
12	VCOO	O	VCO output for analog EFM PLL (Open)
13	VCOI	I	VCO input from for analog EFM PLL (Connected to Ground)
14	TEST	I	TEST pin connected normally to Ground (Connected to Ground)
15	DVss	–	Digital Ground
16	TES2	I	TEST pin connected normally to Ground
17	TES3	I	TEST pin connected normally to Ground
18	PDO	O	Charge-pump output for analog EFM PLL (Open)
19	VPCO	O	Charge-pump output for variable pitch PLL (Open)
20	VCKI	I	Clock input from variable pitch external VCO (Connected to Ground)
21	AVD2	–	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	–	Analog Ground
24	ADIO	I	(Open)
25	RFC	O	(Open)
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	–	Analog Ground
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry comparate voltage input
39	ASYO	O	EFM full swing output
40	AVD1	–	Analog power supply

• Abbreviation
EFM: Eight to Fourteen Modulation
PLL: Phase Locked Loop

Pin No.	Pin Name	I/O	Function
41	DVDD	–	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF (Connected to +5V)
43	PSSL	I	Audio data output mode selection input (Connected to Ground)
44	WDCK	O	48-bit slot D/A interface. Word clock. (Open)
45	LRCK	O	48-bit slot D/A interface. LR clock.
46	DATA	O	DA 16 output when PSSL=1.48-bit slot serial data when PSSL=0
47	BCLK	O	DA 15 output when PSSL=1.48-bit slot data when PSSL=0
48	64DATA	O	DA 14 output when PSSL=1.64-bit slot data when PSSL=0 (Open)
49	64BCLK	O	DA 13 output when PSSL=1.64-bit slot data when PSSL=0 (Open)
50	64LRCK	O	DA 12 output when PSSL=1.64-bit slot data when PSSL=0 (Open)
51	GTOP	O	DA 11 output when PSSL=1.GTOP output when PSSL=0 (Open)
52	XUGF	O	DA 10 output when PSSL=1.XUGF output when PSSL=0 (Open)
53	XPLCK	O	DA 09 output when PSSL=1.XPLCK output when PSSL=0 (Open)
54	GFS	O	DA 08 output when PSSL=1.GFS output when PSSL=0 (Open)
55	PFCK	O	DA 07 output when PSSL=1.RFCK output when PSSL=0 (Open)
56	C2PO	O	DA 06 output when PSSL=1.C2PO output when PSSL=0 (Open)
57	XRAOF	O	DA 05 output when PSSL=1.XRA0F output when PSSL=0 (Open)
58	MNT3	O	DA 04 output when PSSL=1.MNT3 output when PSSL=0 (Open)
59	MNT2	O	DA 03 output when PSSL=1.MNT2 output when PSSL=0 (Open)
60	MNT1	O	DA 02 output when PSSL=1.MNT1 output when PSSL=0 (Open)
61	MNT0	O	DA 01 output when PSSL=1.MNT0 output when PSSL=0 (Open)
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (Open)
64	XTSL	I	X'tal selection input pin (Connected to Ground)
65	DVss	–	Digital Ground
66	FSTI	I	Clock input for digital servo block
67	FSTO	O	2/3 divider output of pins 62, 63
68	FSOF	O	1/4 divider output of pins 62, 63 (Open)
69	C16M	O	16.9344 MHz output (Open)
70	MD2	I	Digital-out ON/OFF control pin (Connected to +5V)
71	DOUT	O	Digital-out output pin (Open)
72	EMPH	O	Playback disc output in emphasis mode (Open)
73	WFCK	O	WFCK output (Open)
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (Open)
76	EXCK	I	Clock input for SBSO read-out (Connected to Ground via a 10 kΩ)
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQSO read-out
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output

• Abbreviation
WFCK: Wirte Frame Clock

Pin No.	Pin Name	I/O	Function
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode (Connected to +5v)
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	Defect selection pin (Connected to Ground)
85	ATSK	I	Input pin for anti-shock (Connected to Ground)
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU
89	COUT	O	Numbers of track counted signal output (Open)
90	DVDD	–	Digital power supply
91	MIRR	O	Mirror signal output (Open)
92	DFCT	O	Defect signal output (Open)
93	FOK	O	Focus OK output (Open)
94	FSW	O	Output to select spindle motor output filter (Open)
95	MON	O	Output to control ON/OFF of spindle motor (Open)
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo (Open)
98	LOCK	O	GFS is sampled by 460 Hz. H when GFS is H (Open)
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

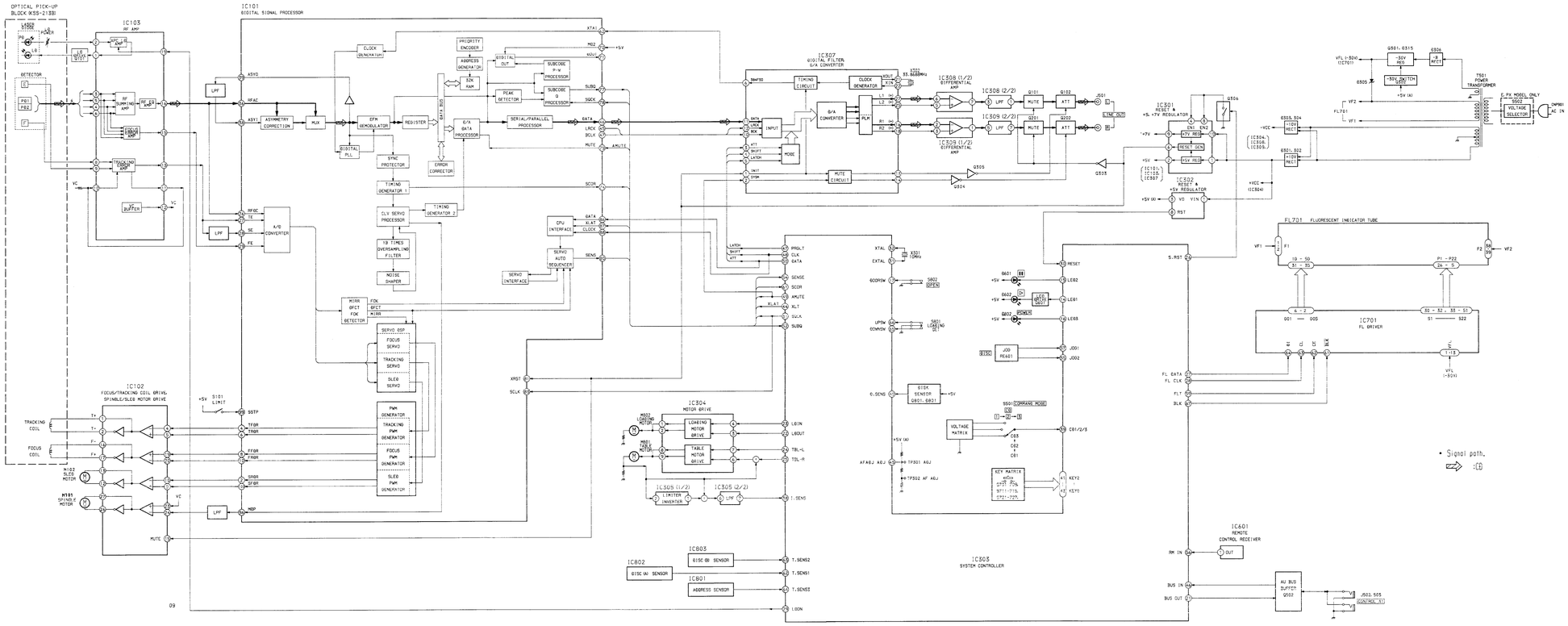
• Abbreviation
GFS: Guard Frame Sync

• **IC303 SYSTEM CONTROL (CXD84332-028Q)**

Pin No.	Pin Name	I/O	Function
1	A3	O	Open
2	A4	O	Open
3	A5	O	Open
4	A6	O	Open
5	A7	O	Open
6	A12	O	Open
7	A14	O	Open
8	A11	O	Open
9	A10	O	Open
10	A9	O	Open
11	A8	O	Open
12	A13	O	Open
13	$\overline{WE}$	O	Open
14	LED1	O	PLAY LED control H: Lighting up
15	LED2	O	PAUSE LED control L: Lighting up
16	LED 3	O	POWER standby LED conteol L: Lighting up
17	DOOR SW	I	Front foor switch H: Open
18	SCLK	O	Open
19	SRDT	I	Open
20	MODE	O	Pull-up for +5V
21	BUSOUT	O	CONTROL-A1 out
22	LDOUT	O	Loading motor PWM output for outside direction
23	LDIN	O	Loading motor PWM output for inside direction
24	TBL.L	O	Table motor PWM output for left turn
25	TBL.R	O	Table motor PWM output for right turn
26	S.RST	O	Power control H: Power ON
27	FL.DATA	O	Data for fluorescent indicator and LED control
28	FL.CLK	O	Clock for fluorescent indicator and LED control
29	LDON	O	Laaser diode control H: ON
30	RESET	I	Reset input L: Reset
31	EXTAL	O	X'tal Oscillation (10MHz)
32	XTAL	I	X'tal Oscillation (10MHz)
33	Vss	–	Connect to ground
34	TX	–	Open
35	TEX	–	Connect to ground
36	AVss	–	Connect to ground
37	AVREF	–	Connect to +5V
38	I.SENS	I	Table motor current detect More than 3V: Avnormal condition
39	CD 1/2/3	I	Command mode switch
40	D.SENS	I	Disc sensor input Less than 3V: Existing disc

Pin No.	Pin Name	I/O	Function
41	KEY2	I	Key input
42	KEY1	I	Key input
43	KEY0	I	Key input
44	XLT	O	Latch for servo IC
45	AFADJ ADJ	I	Test mode input.
46	BUSIN	I	CONTROL-A1 input L: Active
47	PRGLT	O	Latch for digital filter IC
48	CLK	O	Clock for servo IC and digital filter IC
49	AMUTE	O	Audio mute H: Mute ON
50	DATA	O	Data for servo IC and digital filter IC
51	SQCK	O	Clock for sub code Q
52	SUBQ	I	Sub code Q data input
53	NC	–	Open
54	SENSE	I	Servo sensor signal
55	JOG2	I	Jog input
56	RMIN	I	Remote control signal
57	JOG1	I	Jog input
58	LEDLT	O	Open
59	FLT	O	Latch for fluorescent indicator driver IC
60	DQSY	O	Open
61	SCOR	O	Sub code Q synchronous signal Start at rising edge
62	T.SENS1	I	Table position sensor 1 input
63	T.SENS2	I	Table position sensor 2 input
64	T.SENS3	I	Table position sensor 3 input
65	DOWN SW	I	Loading out switch input L: Out
66	UPSW	I	Loading in switch input L: In
67	BLK	O	Reset for fluorescent indicator driver IC
68	D3	I/O	Open
69	D4	I/O	Open
70	D5	I/O	Open
71	D6	I/O	Open
72	V_{DD}	–	Connect to +5V
73	NC (V_{DD})	–	Connect to +5V
74	D7	I/O	Open
75	D0	I/O	Open
76	D1	I/O	Open
77	D2	I/O	Open
78	A0	O	Open
79	A1	O	Open
80	A2	O	Open

6-3. BLOCK DIAGRAM



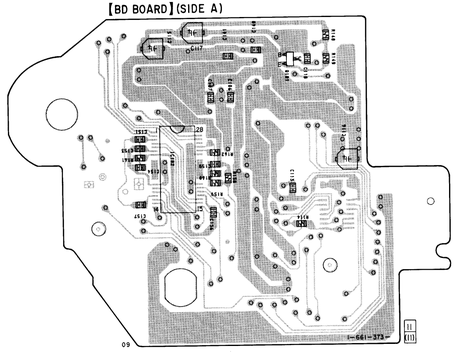
6-4. PRINTED WIRING BOARD — BD, DISP SECTION —

• See page 21 for Circuit Boards Location.

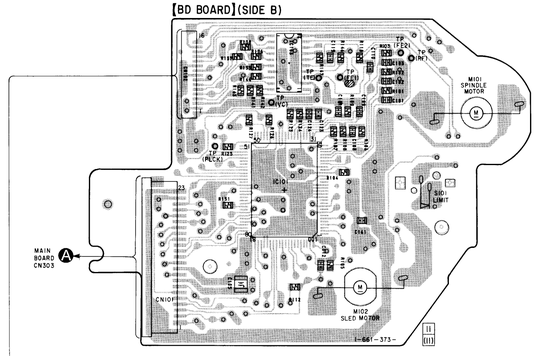
• Semiconductor Location

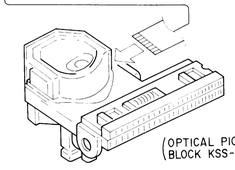
Ref. No.	Location
D601	C-14
D602	C-12
D802	D-18
IC101	C-9
IC102	B-2
IC103	A-9
IC601	H-12
IC701	F-19
Q101	A-4
Q601	C-13

【BD BOARD】(SIDE A)



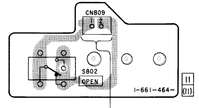
【BD BOARD】(SIDE B)



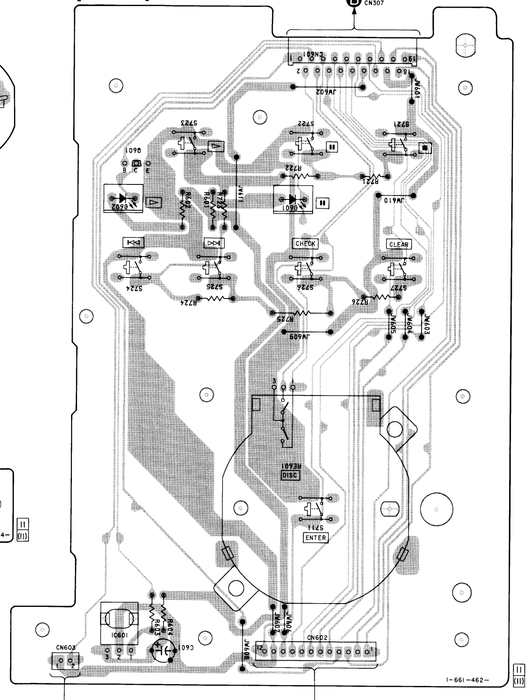


(OPTICAL PICK-UP BLOCK KSS-213B/S-N)

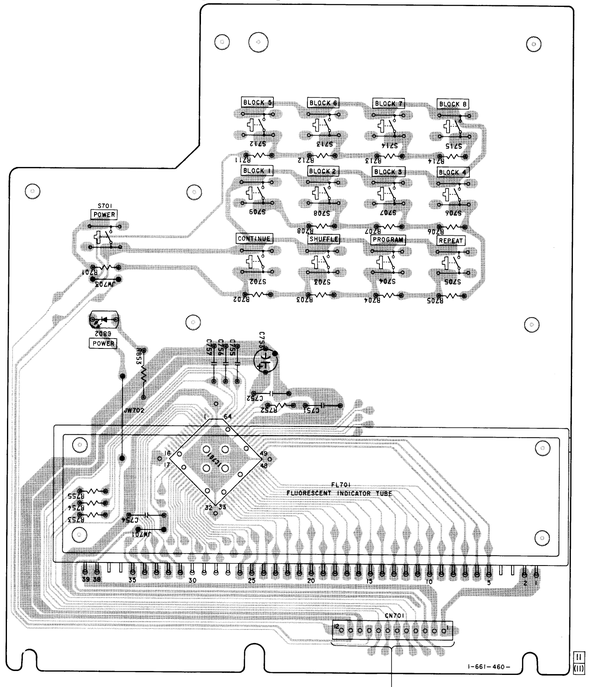
【DOOR SW BOARD】



【JOG BOARD】



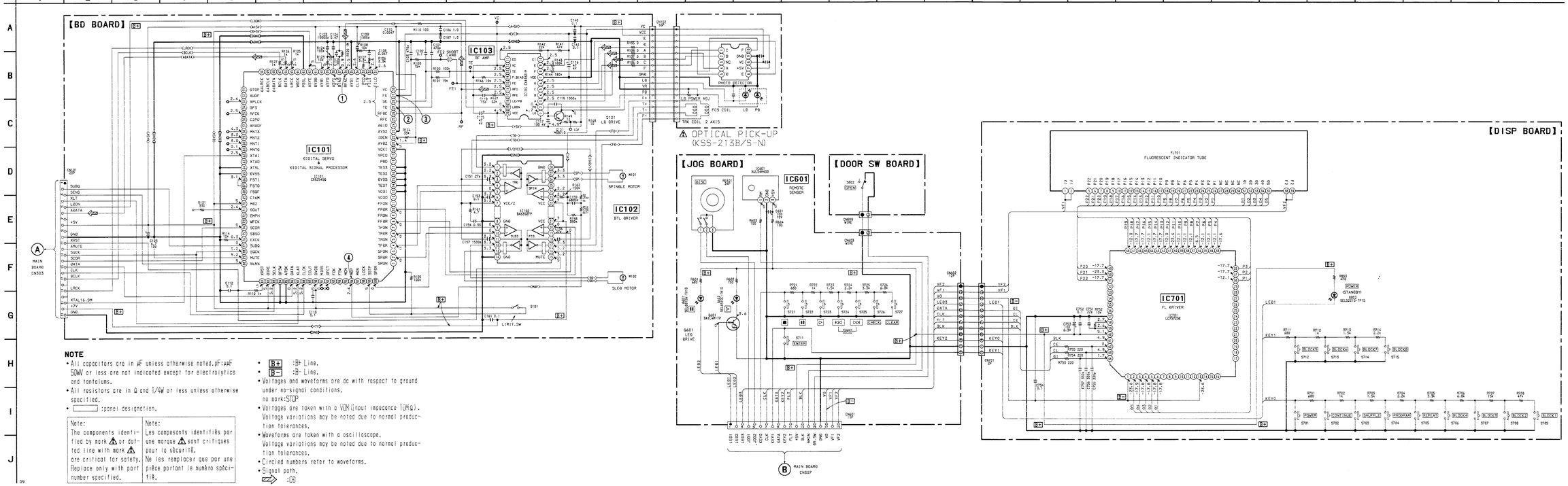
【DISP BOARD】



Note:
- ⟷: parts extracted from the component side.
- ○: Through hole.
- : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)
- : Solder bridge.

6-5. SCHEMATIC DIAGRAM — BD, DISP SECTION —

- See page 47 for IC Block Diagrams.
- See page 22 for IC Pin Functions. (IC101)



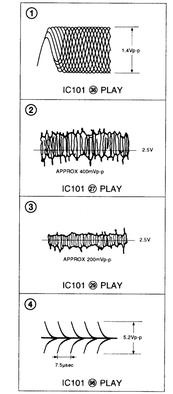
NOTE

- All capacitors are in μF unless otherwise noted. pF: μF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- [ ] : panel designation.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- B− : B− Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

• Waveforms

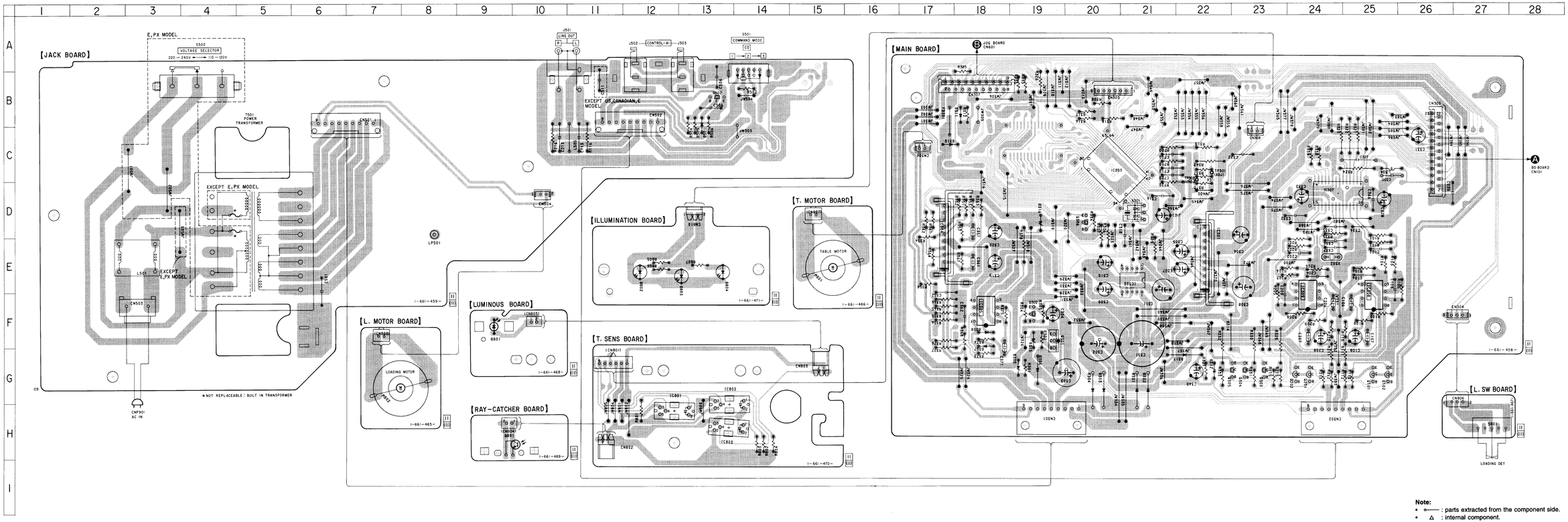


6-6. PRINTED WIRING BOARD — MAIN SECTION —

• See page 21 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D301	G-21
D302	G-21
D303	G-20
D304	G-20
D305	G-19
D306	G-19
D307	G-18
D308	F-18
D310	C-17
D311	B-17
D312	G-22
D313	G-21
D315	G-19
D316	D-19
D501	C-13
D801	F-9
D802	E-12
D803	E-12
D804	E-13
IC301	E-22
IC302	E-21
IC303	C-20
IC304	D-17
IC305	F-18
IC307	D-24
IC308	F-25
IC309	F-24
IC801	G-12
IC802	G-13
IC803	H-13
Q101	G-25
Q102	G-25
Q201	G-24
Q202	G-24
Q301	F-19
Q302	F-19
Q303	G-23
Q304	G-23
Q305	G-22
Q306	D-20
Q502	B-13
Q801	H-9

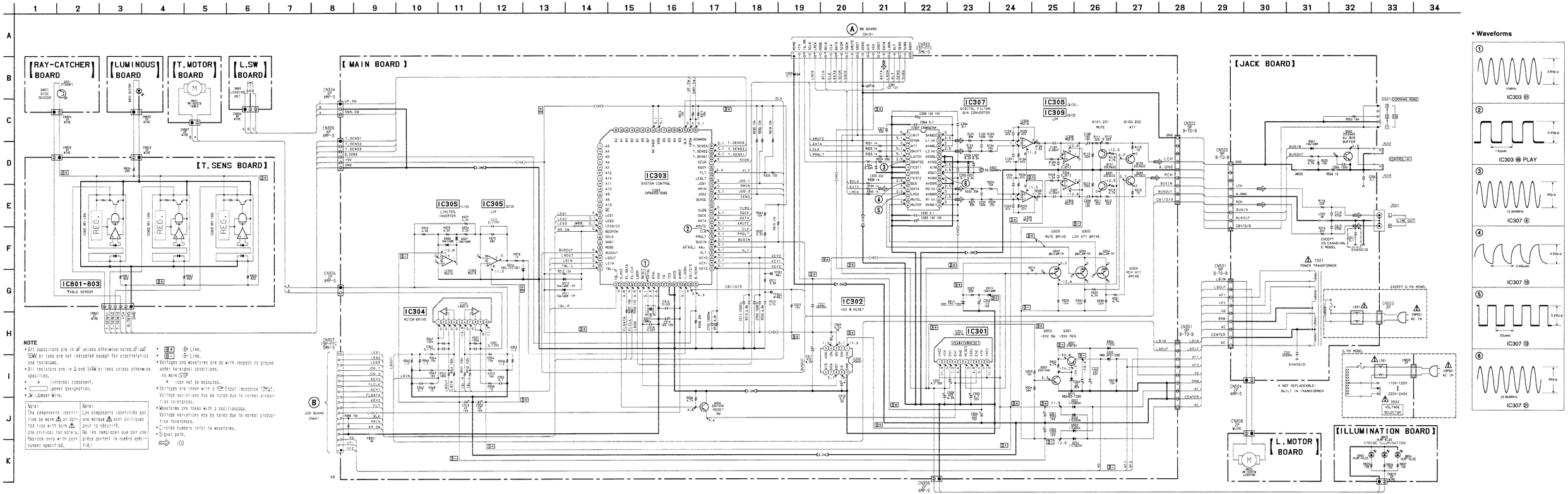


Note:

- ○—— : parts extracted from the component side.
- △ : internal component.
- ▒▒ : Pattern from the side which enable seeing.

6-7. SCHEMATIC DIAGRAM — MAIN SECTION—

- See page 48 for IC Block Diagrams.
- See page 25 for IC Pin Functions. (IC303)



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF. 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : Internal component.
- ▭ : Panel designation.
- ⋈ : Jumper Wire.

Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- B- : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions, no mark:STOP
  * : can not be measured.
- Voltages are taken with a VOM(Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.

⇨ : (E)

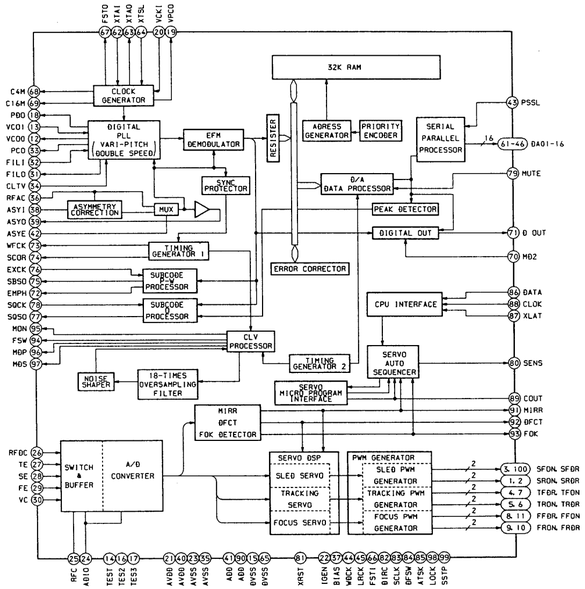
• Waveforms

① 1.0MHz 3.8Vp-p IC303 ㉛
② 1.6μsec 5.4Vp-p IC303 ㊻ PLAY
③ 16.934MHz 4Vp-p IC307 ⑥
④ 0.48μsec 4.9Vp-p IC307 ⑲
⑤ 23μsec 5.2Vp-p IC307 ⑱
⑥ 33.868MHz 4Vp-p IC307 ㉑

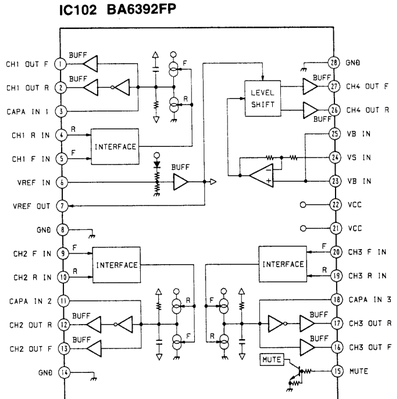
6-8. IC BLOCK DIAGRAMS

• BD, DISP Section

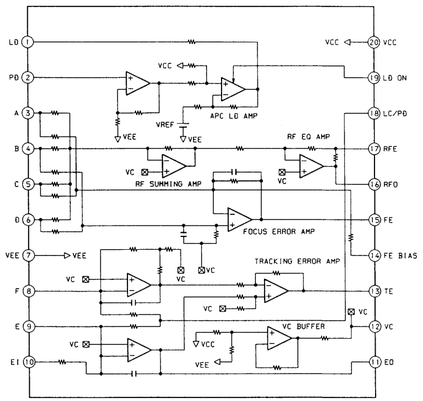
IC101 CXD2545Q



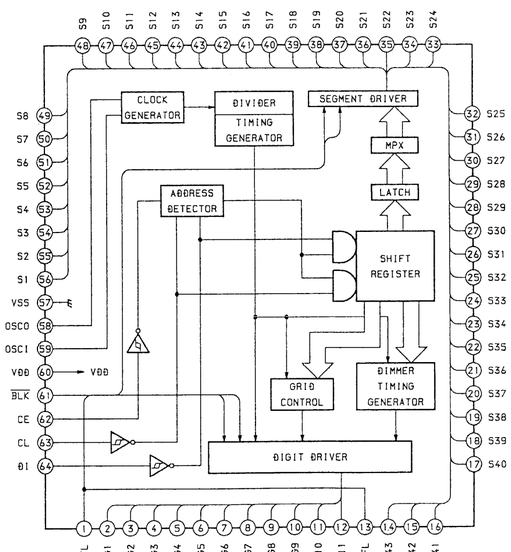
IC102 BA6392FP



IC103 CXA1821M

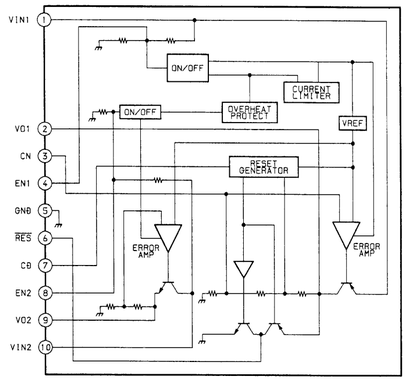


IC701 LC75725E

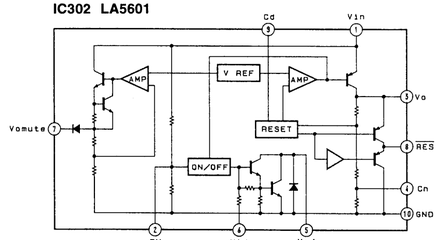


• MAIN Section

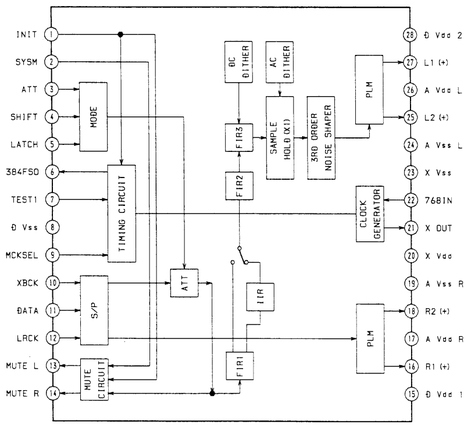
IC301 LA5616



IC302 LA5601



IC307 CXD8567AM



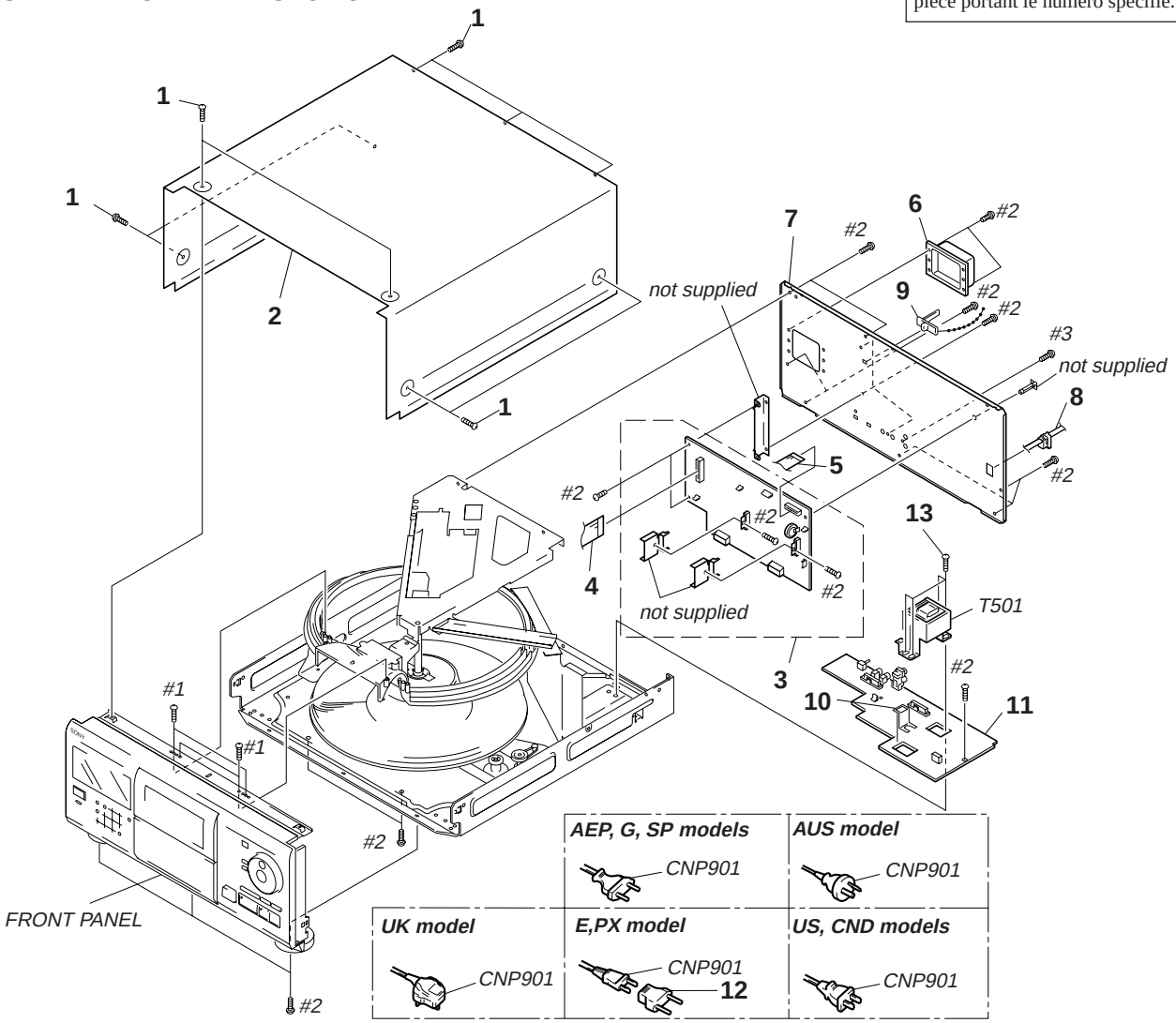
SECTION 7
EXPLODED VIEWS

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  AUS : Australian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

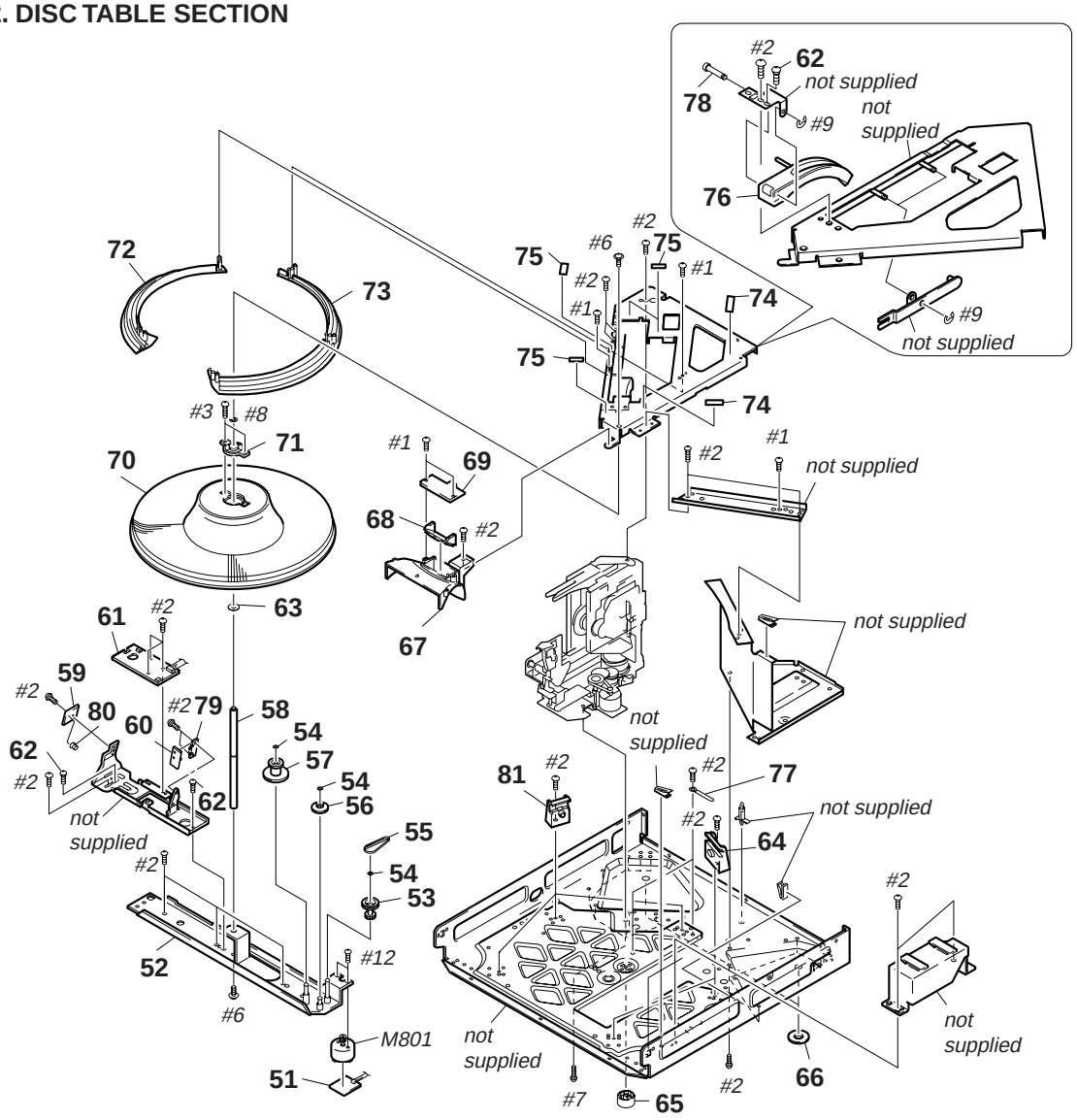
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

7-1. CASE AND BACK PANEL SECTION



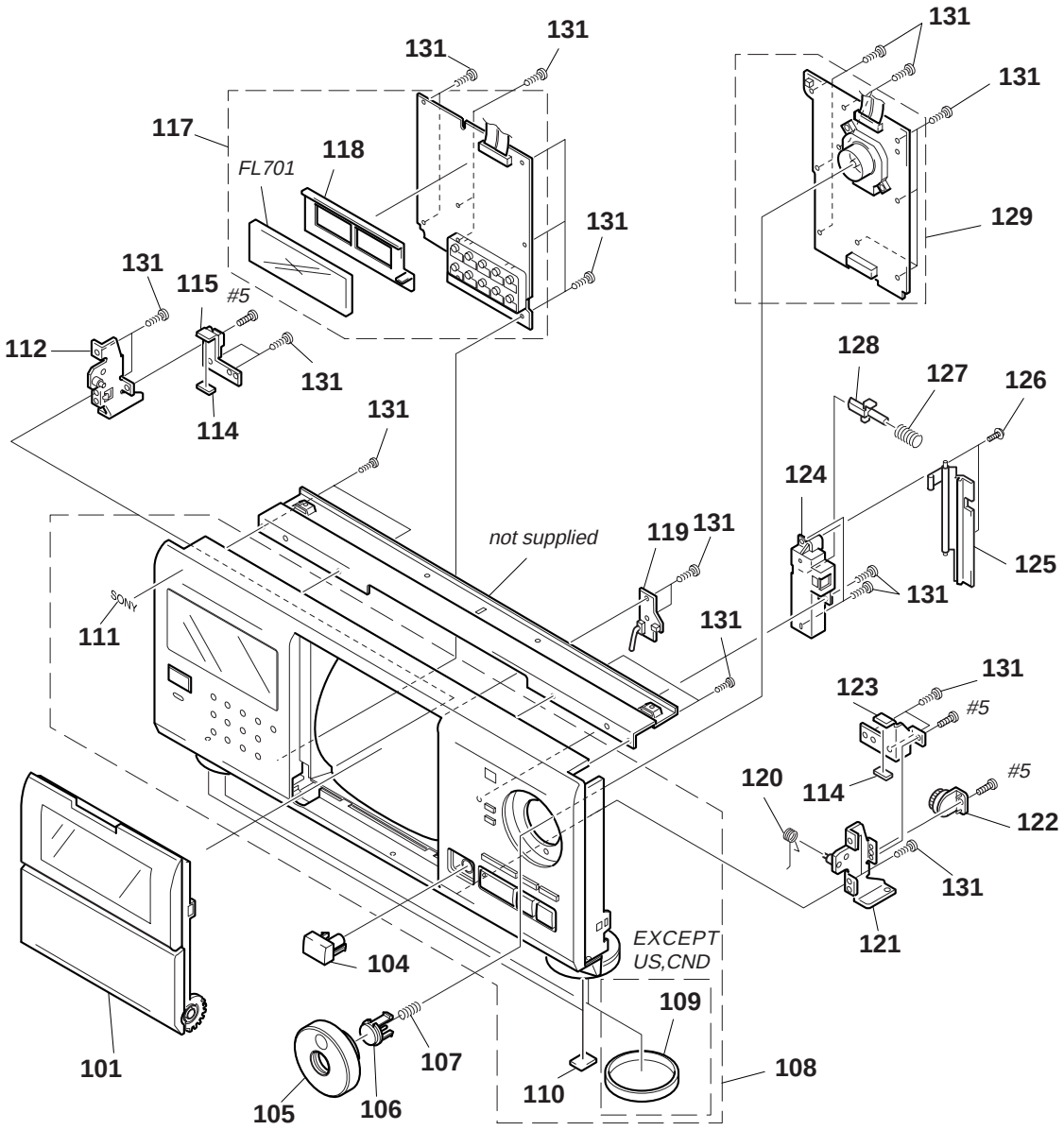
Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)	
* 2	4-982-946-11	CASE	
* 3	A-4699-023-A	MAIN BOARD, COMPLETE (US,CND)	
* 3	A-4699-024-A	MAIN BOARD, COMPLETE (EXCEPT US,CND)	
4	1-773-183-11	WIRE (FLAT TYPE) (23 CORE)	
5	1-777-345-11	WIRE (FLAT TYPE) (19 CORE)	
* 6	4-982-807-01	COVER (FFC)	
* 7	4-982-790-01	PANEL, BACK (US)	
* 7	4-982-790-11	PANEL, BACK (CND)	
* 7	4-982-790-21	PANEL, BACK (AEP,G)	
* 7	4-982-790-31	PANEL, BACK (UK)	
* 7	4-982-790-41	PANEL, BACK (E,PX)	
* 7	4-982-790-51	PANEL, BACK (SP)	
* 7	4-982-790-61	PANEL, BACK (AUS)	
* 8	3-703-244-00	BUSHING (2104), CORD (EXCEPT E,PX)	
8	3-703-571-11	BUSHING (S) (4516), CORD (E,PX)	
9	4-956-370-12	BAND, PLUG FIXED (UK,AUS)	
* 10	4-962-200-01	PLATE (TR), GROUND	
* 11	1-661-459-11	JACK BOARD	
12	1-569-007-11	ADAPTOR, CONVERSION 2P (E,PX)	
13	4-886-821-11	SCREW, M3 CASE	
⚠CNP901	1-575-042-21	CORD, POWER (US,CND)	
⚠CNP901	1-575-651-21	CORD, POWER (AEP,G,SP)	
⚠CNP901	1-696-027-11	CORD, POWER (E,PX)	
⚠CNP901	1-696-845-11	CORD, POWER (AUS)	
⚠CNP901	1-751-529-11	CORD, POWER (UK)	
⚠T501	1-429-670-11	TRANSFORMER, POWER (US,CND)	
⚠T501	1-429-671-11	TRANSFORMER, POWER (AEP,G,UK,AUS,SP)	
⚠T501	1-429-672-11	TRANSFORMER, POWER (E,PX)	

7-2. DISC TABLE SECTION



Ref. No.	Part No.	Description	Remark
* 51	1-661-466-11	T. MOTOR BOARD	
52	X-4947-230-1	BRACKET (TABLE) ASSY	
53	X-4947-607-1	GEAR (PULLEY) ASSY	
54	3-325-697-21	WASHER	
55	4-982-867-01	BELT (TIMING)	
56	4-982-893-01	GEAR (CENTER 2)	
57	4-982-891-01	GEAR (TABLE)	
58	4-982-892-01	SHAFT (CENTER)	
* 59	1-661-468-11	LUMINOUS BOARD	
* 60	1-661-469-11	RAY-CATCHER BOARD	
* 61	1-661-470-11	T.SENS BOARD	
62	3-356-601-11	SCREW, STEP	
63	3-701-446-21	WASHER, 8	
64	X-4947-229-1	HOLDER (ROLLER) ASSY	
65	4-931-169-01	FOOT	
66	4-983-279-01	CUSHION (RF)	
* 67	4-982-804-01	COVER (DISC)	
68	4-982-805-01	INDICATOR (INTERNAL)	
* 69	1-661-471-11	ILLUMINATION BOARD	
70	X-4947-231-1	TABLE (200) ASSY	
71	4-976-471-01	BEARING (TABLE)	
* 72	4-982-803-01	RING (B)	
* 73	4-982-802-01	RING (A)	
* 74	3-378-433-01	CUSHION, SARANET	
75	4-985-553-01	CUSHION	
76	4-982-862-01	GUIDE (DISC T)	
77	3-703-397-01	STOPPER, WIRING	
78	4-982-870-01	SHAFT (GUIDE FULCRUM)	
* 79	4-985-300-01	HOLDER (P-T)	
* 80	4-976-473-01	HOLDER (LED-S)	
81	X-4947-606-1	HOLDER (ROLLER 2) ASSY	
M801	A-4604-847-A	MOTOR ASSY, LOADING (TABLE)	

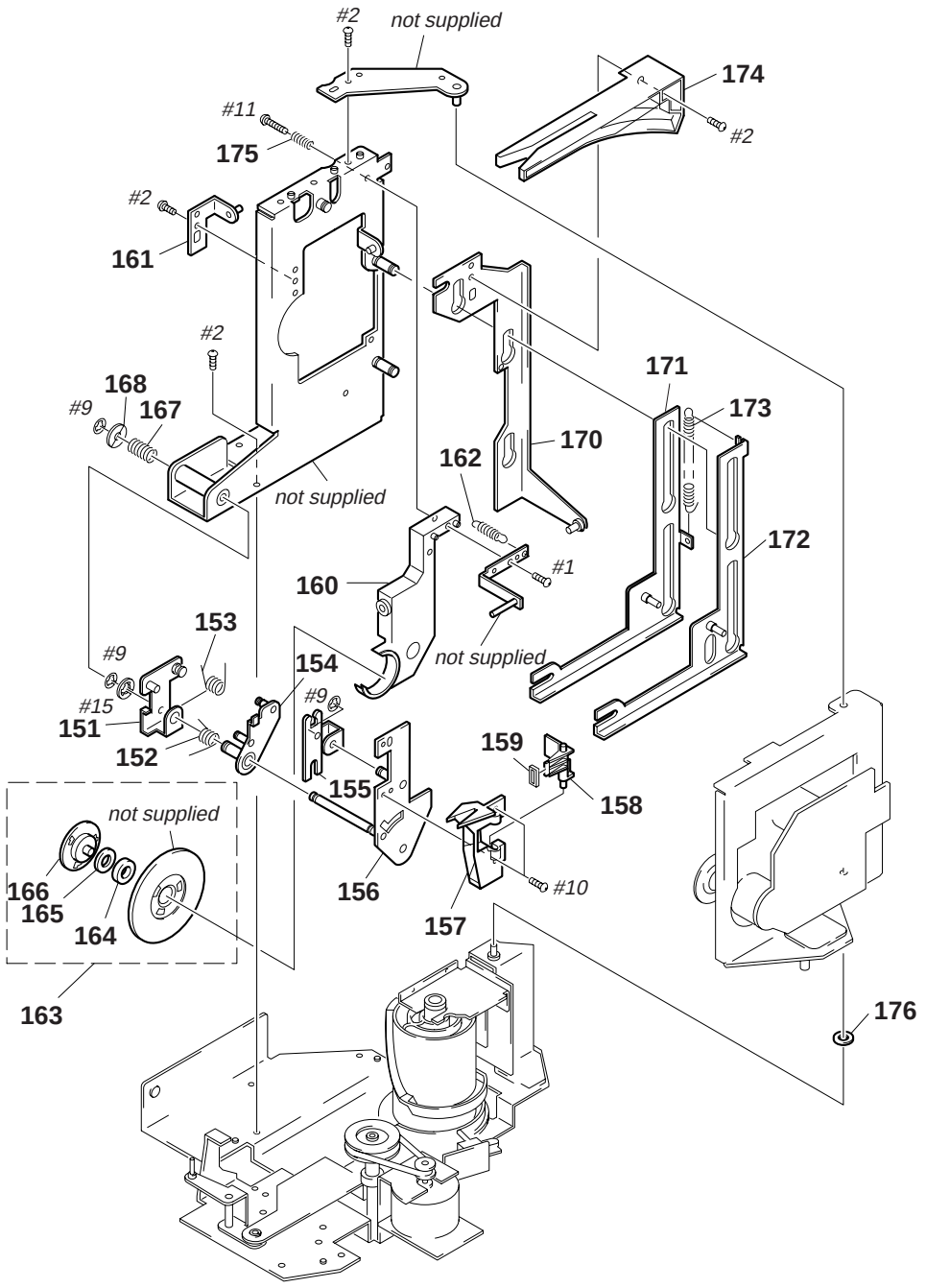
7-3. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
101	X-4947-588-1	LID(200) ASSY	
104	4-982-781-01	BUTTON (OPEN)	
105	4-982-787-01	KNOB (JOG)	
106	4-982-788-01	BUTTON (ENTER)	
107	4-984-085-01	SPRING (ENTER), COIL	
108	X-4947-216-1	PANEL ASSY, FRONT (US,CND)	
108	X-4947-359-1	PANEL ASSY, FRONT (EXCEPT US,CND)	
109	4-977-593-11	RING (DIA. 50), ORNAMENTAL (EXCEPT US,CND)	
110	4-977-358-11	CUSHION (8X12.5)	
111	4-963-404-21	EMBLEM (5-A), SONY	
112	X-4947-219-1	PLATE (A) ASSY, FULCRUM	
114	4-982-799-01	CUSHION (STOPPER)	
* 115	4-982-793-01	STOPPER (A)	
* 117	A-4699-037-A	DISP BOARD, COMPLETE	
* 118	4-982-786-01	HOLDER (FL)	

Ref. No.	Part No.	Description	Remark
* 119	1-661-464-11	DOOR SW BOARD	
120	4-982-798-11	SPRING (B), TORSION	
121	X-4947-220-1	PLATE (B) ASSY, FULCRUM	
122	3-354-963-01	DAMPER	
* 123	4-982-794-01	STOPPER (B)	
* 124	4-982-782-01	HOLDER (OPEN)	
* 125	4-982-783-01	LEVER (WINDMILL)	
126	4-933-134-01	SCREW (+PTPWH M2.6X6)	
127	4-982-785-01	SPRING (OPEN), COMPRESSION	
128	4-982-784-01	LEVER (LOCK)	
* 129	A-4699-036-A	JOG BOARD, COMPLETE	
131	4-951-620-01	SCREW (2.6X8), +BVTP	

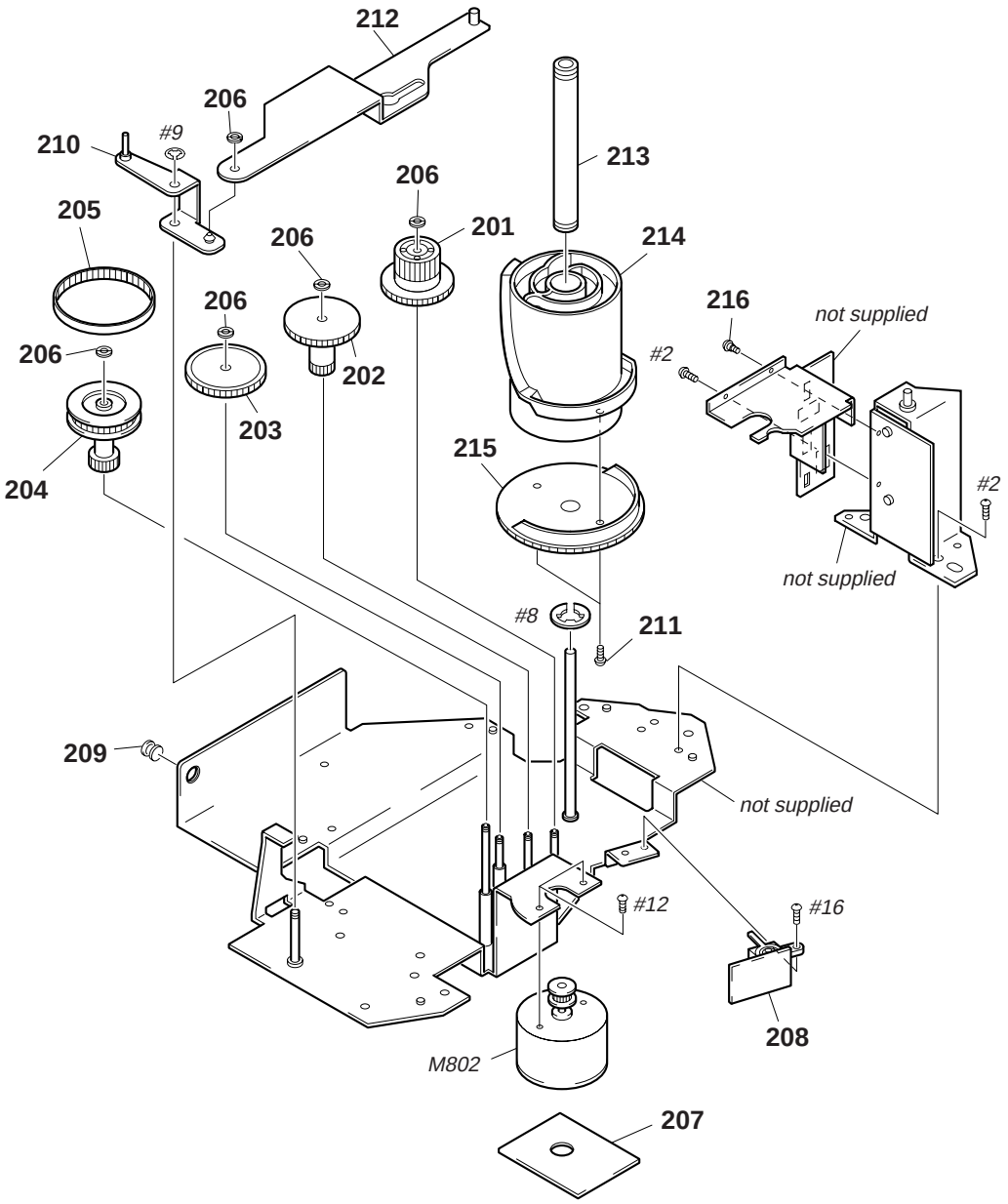
7-4. MECHANISM SECTION-1 (CDM-40)



Ref. No.	Part No.	Description	Remark
FL701	1-517-517-11	INDICATOR TUBE, FLUORESCENT	
151	X-4947-241-1	LEVER (C) ASSY	
152	4-982-882-01	SPRING (LIMITTER), TORSION	
153	4-982-881-01	SPRING (HOLDER), TORSION	
154	X-4947-239-1	LIMITTER (A) ASSY	
155	4-982-853-01	LEVER (B)	
156	X-4947-240-1	LEVER (A) ASSY	
157	4-982-854-01	HOLDER (DISC A)	
158	4-982-855-01	HOLDER (DISC B)	
159	4-982-856-01	PAD	
160	4-976-458-01	HOLDER (MAGNET)	
161	X-4946-326-1	HOLDER (CLAMP) ASSY	
162	4-983-777-01	SPRING (MG), TENSION	

Ref. No.	Part No.	Description	Remark
163	A-4672-092-A	MAGNET ASSY	
164	3-366-559-02	MAGNET (CHUCK)	
165	4-960-633-01	YOKE (MAGNET)	
166	4-960-632-11	PULLEY (B)	
167	4-983-319-01	SPRING (THRUST), COMPRESSION	
* 168	4-976-456-01	WASHER (STOPPER)	
170	X-4947-242-1	SLIDER (C) ASSY	
171	X-4947-238-1	SLIDER (B) ASSY	
172	X-4947-237-1	SLIDER (A) ASSY	
173	4-982-880-01	SPRING (SLIDER A),TENSION	
* 174	4-982-863-01	GUIDE (DISC P)	
175	3-938-588-01	SPRING, COMPRESSION	
176	3-701-441-21	ø4 POLY WASHER	

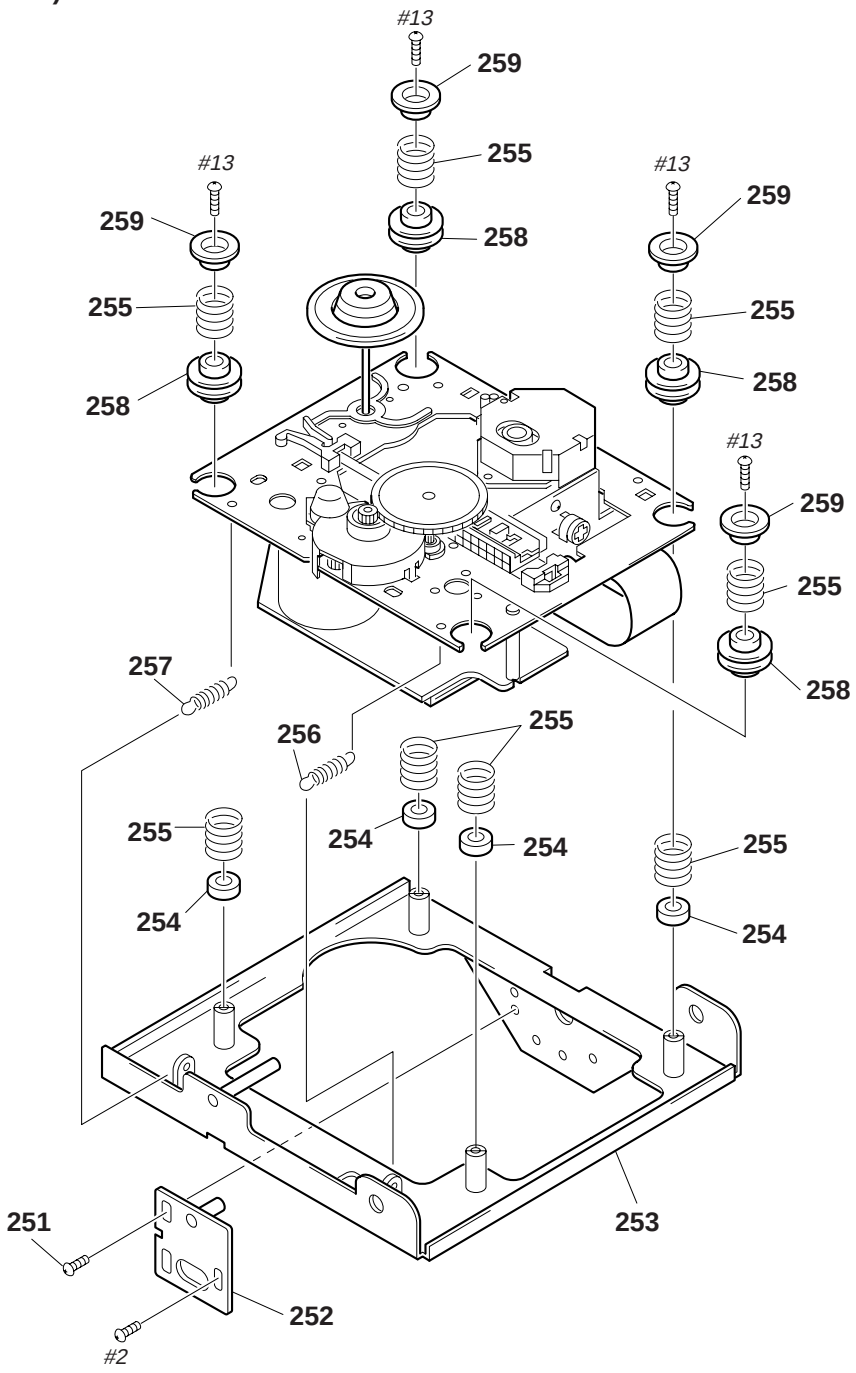
7-5. MECHANISM SECTION-2 (CDM-40)



Ref. No.	Part No.	Description	Remark
201	4-976-465-01	GEAR (LOADING 1)	
202	4-976-466-01	GEAR (LOADING 2)	
203	4-982-893-01	GEAR (CENTER 2)	
204	X-4947-607-1	GEAR (PULLEY) ASSY	
205	4-982-867-01	BELT (TIMING)	
206	3-325-697-21	WASHER	
* 207	1-661-465-11	L.MOTOR BOARD	
* 208	1-661-467-11	L.SW BOARD	
209	3-489-073-00	SCREW, THRUST	
210	X-4947-227-1	LEVER (STOPPER) ASSY	

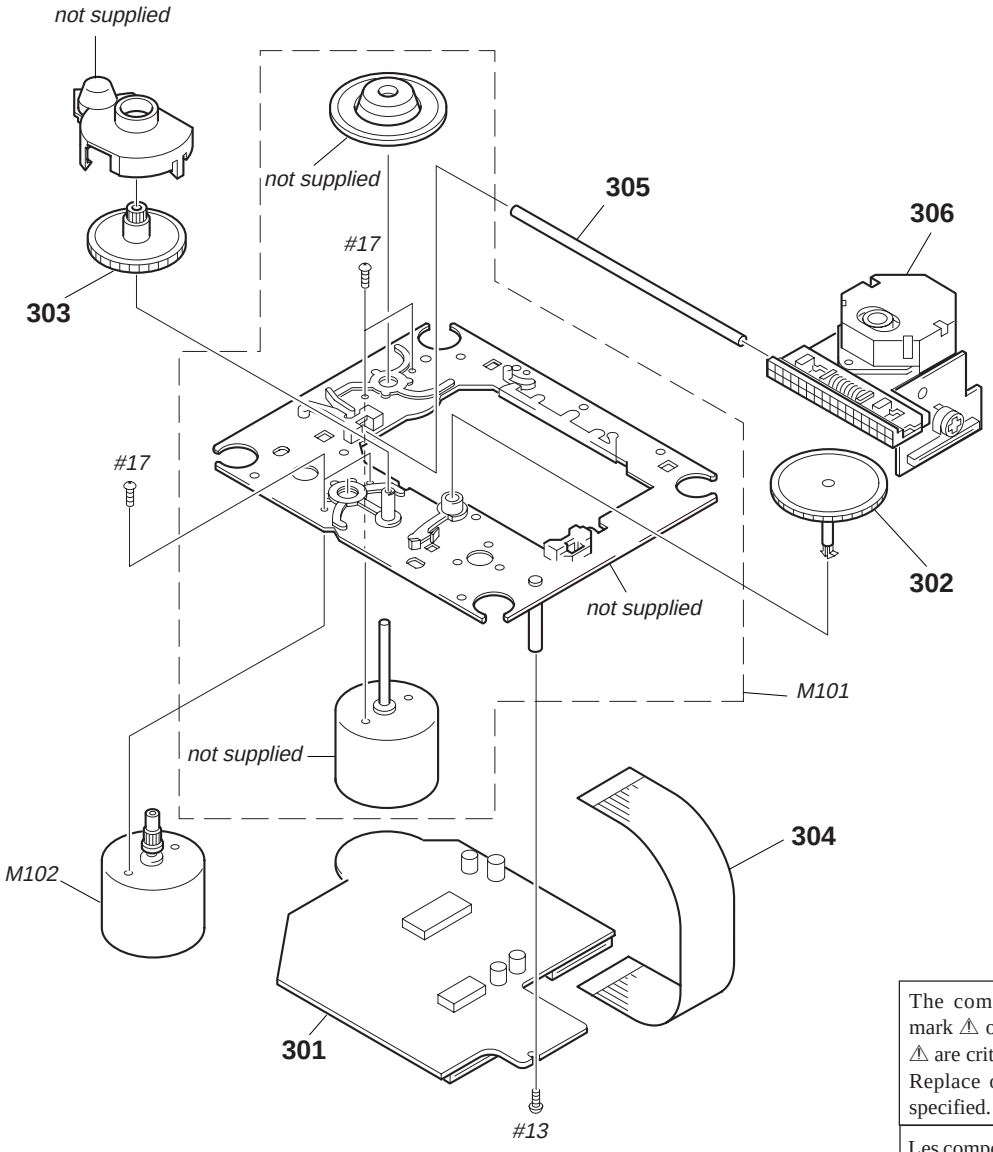
Ref. No.	Part No.	Description	Remark
211	4-951-291-01	SCREW	
212	X-4947-234-1	SLIDER (LOCK) ASSY	
213	4-982-857-01	BEARING (CAM)	
214	4-982-860-01	CAM (A)	
215	4-982-861-01	CAM (B)	
216	3-356-601-11	SCREW, STEP	
M802	A-4604-847-A	MOTOR ASSY, LOADING (LOADING)	

7-6. BASE UNIT SECTION-1
(KSM-213BKN/M-N)



Ref. No.	Part No.	Description	Remark
251	3-356-601-11	SCREW, STEP	
252	X-4947-244-1	SLIDER (BU ADJUSTMENT) ASSY	
253	X-4947-243-1	HOLDER (BU) ASSY	
254	4-982-859-01	HOLDER (DAMPER)	
255	4-982-878-01	SPRING (F), COMPRESSION	
256	4-982-872-01	SPRING (F-2), TENSION	
257	4-982-871-01	SPRING (F-1), TENSION	
258	4-982-858-01	DAMPER	
259	4-960-617-01	CAP (F)	

7-7. BASE UNIT SECTION-2
(KSM-213 BKN/M-N)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
* 301	A-4699-038-A	BD BOARD, COMPLETE	
302	2-626-907-01	GEAR (A)(S)	
303	2-627-003-01	GEAR (B)(RP)	
304	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
305	2-626-908-01	SHAFT, SLED	

Ref. No.	Part No.	Description	Remark
⚠ 306	8-848-376-01	OPTICAL PICK-UP BLOCK KSS-213B/S-N	
M101	X-2626-234-1	T.T CHASSIS ASSY (MG)(K)(SPINDLE)	
M102	X-2625-769-1	MOTOR GEAR ASSY (MB)(RP)(SLED)	

SECTION 8
ELECTRICAL PARTS LIST

BD

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µ A..., uPA...: µ PA..., uPB...: µ PB..., uPC...: µ PC..., uPD...: µ PD...
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  AUS : Australian model

Ref. No.	Part No.	Description			Remark
*	A-4699-038-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT	100uF	20%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C119	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C140	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C156	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C157	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-770-072-11	CONNECTOR, FFC 23P			
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-369-78	IC CXD2545Q			
IC102	8-759-176-09	IC BA6392FP			
IC103	8-752-072-45	IC CXA1821M-T6			

Ref. No.	Part No.	Description			Remark
		< MOTOR >			
M101	X-2626-234-1	T.T CHASSIS ASSY (MG)(K)(SPINDLE)			
M102	X-2625-769-1	MOTOR GEAR ASSY (MB)(RP)(SLED)			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R110	1-216-025-91	METAL GLAZE	100	5%	1/10W
R112	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R125	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R126	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R127	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R135	1-216-295-91	CONDUCTOR, CHIP(2012)			
R136	1-216-295-91	CONDUCTOR, CHIP(2012)			
R137	1-216-295-91	CONDUCTOR, CHIP(2012)			
R138	1-216-295-91	CONDUCTOR, CHIP(2012)			
R141	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R142	1-216-081-00	METAL CHIP	22K	5%	1/10W
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	METAL GLAZE	12	5%	1/10W
R158	1-216-111-91	METAL GLAZE	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R160	1-216-295-91	CONDUCTOR, CHIP(2012)			
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W

BD **DISP** **DOOR SW** **ILLUMINATION** **JACK**

Ref. No.	Part No.	Description			Remark
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
**********					
*	A-4699-037-A	DISP BOARD, COMPLETE			
		**********			
*	4-982-786-01	HOLDER (FL)			
		< CAPACITOR >			
C751	1-162-207-31	CERAMIC	22PF	5%	50V
C752	1-164-159-11	CERAMIC	0.1uF		50V
C753	1-124-584-00	ELECT	100uF	20%	10V
C754	1-164-159-11	CERAMIC	0.1uF		50V
C755	1-162-288-31	CERAMIC	330PF	10%	50V
C756	1-162-288-31	CERAMIC	330PF	10%	50V
C757	1-162-288-31	CERAMIC	330PF	10%	50V
		< DIODE >			
D802	8-719-046-44	DIODE SEL5221S (POWER)			
		< FLUORESCENT INDICATOR >			
FL701	1-517-517-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	8-759-399-58	IC LC75725E			
		< RESISTOR >			
R701	1-249-415-11	CARBON	680	5%	1/4W F
R702	1-249-417-11	CARBON	1K	5%	1/4W F
R703	1-249-419-11	CARBON	1.5K	5%	1/4W F
R704	1-249-421-11	CARBON	2.2K	5%	1/4W F
R705	1-247-843-11	CARBON	3.3K	5%	1/4W
R706	1-249-427-11	CARBON	6.8K	5%	1/4W F
R707	1-249-431-11	CARBON	15K	5%	1/4W
R708	1-249-437-11	CARBON	47K	5%	1/4W
R711	1-249-415-11	CARBON	680	5%	1/4W F
R712	1-249-417-11	CARBON	1K	5%	1/4W F
R713	1-249-419-11	CARBON	1.5K	5%	1/4W F
R714	1-249-421-11	CARBON	2.2K	5%	1/4W F
R752	1-249-429-11	CARBON	10K	5%	1/4W
R753	1-249-409-11	CARBON	220	5%	1/4W F
R754	1-249-409-11	CARBON	220	5%	1/4W F
R755	1-249-409-11	CARBON	220	5%	1/4W F
R853	1-249-413-11	CARBON	470	5%	1/4W F
		< SWITCH >			
S701	1-572-184-11	SWITCH, TACTILE (POWER)			

Ref. No.	Part No.	Description	Remark
S702	1-572-184-11	SWITCH, TACTILE (CONTINUE))	
S703	1-572-184-11	SWITCH, TACTILE (SHUFFLE)	
S704	1-572-184-11	SWITCH, TACTILE (PROGRAM)	
S705	1-572-184-11	SWITCH, TACTILE (REPEAT)	
S706	1-572-184-11	SWITCH, TACTILE (BLOCK 4)	
S707	1-572-184-11	SWITCH, TACTILE (BLOCK 3)	
S708	1-572-184-11	SWITCH, TACTILE (BLOCK 2)	
S709	1-572-184-11	SWITCH, TACTILE (BLOCK 1)	
S712	1-572-184-11	SWITCH, TACTILE (BLOCK 5)	
S713	1-572-184-11	SWITCH, TACTILE (BLOCK 6)	
S714	1-572-184-11	SWITCH, TACTILE (BLOCK 7)	
S715	1-572-184-11	SWITCH, TACTILE (BLOCK 8)	
**********			
*	1-661-464-11	DOOR SW BOARD	
		**********	
		< SWITCH >	
S802	1-762-386-11	SWITCH, PUSH (OPEN)	
**********			
*	1-661-471-11	ILLUMINATION BOARD	
		**********	
		< CONNECTOR >	
CN810	1-506-481-11	PIN, CONNECTOR 2P	
		< DIODE >	
D802	8-719-059-65	DIODE HLMF-KL05 (INSIDE ILLUMINATION)	
D803	8-719-059-65	DIODE HLMF-KL05 (INSIDE ILLUMINATION)	
D804	8-719-059-65	DIODE HLMF-KL05 (INSIDE ILLUMINATION)	
		< RESISTOR >	
R805	1-249-407-11	CARBON 150 5% 1/4W F	
R806	1-249-407-11	CARBON 150 5% 1/4W F	
R807	1-249-407-11	CARBON 150 5% 1/4W F	
**********			
*	1-661-459-11	JACK BOARD	
		**********	
*	4-962-200-01	PLATE (TR), GROUND	
		< CAPACITOR >	
C113	1-162-290-31	CERAMIC 470PF 10% 50V	
C213	1-162-290-31	CERAMIC 470PF 10% 50V	
C501	1-161-494-00	CERAMIC 0.022uF 25V	
C504	1-164-159-11	CERAMIC 0.1uF 50V	
C506	1-162-282-31	CERAMIC 100PF 10% 50V	
C511	1-164-159-11	CERAMIC 0.1uF 50V	(EXCEPT US,CND,E)

Ref. No.	Part No.	Description				Remark
		< CONNECTOR >				
CN501	1-770-724-11	CONNECTOR, BOARD TO BOARD 9P				
CN502	1-770-724-11	CONNECTOR, BOARD TO BOARD 9P				
CN503	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P				
* CN504	1-568-951-11	PIN, CONNECTOR 2P				
		< DIODE >				
D501	8-719-987-63	DIODE 1N4148M				
		< JACK >				
J501	1-770-719-11	JACK, PIN 2P (LINE OUT)				
* J502	1-764-188-11	JACK (SMALL TYPE)(DIA. 3.5)(CONTROL A1)				
* J503	1-764-188-11	JACK (SMALL TYPE)(DIA. 3.5)(CONTROL A1)				
		< COIL >				
⚠ L501	1-421-915-11	COIL, LINE FILTER				
		< TRANSISTOR >				
Q502	8-729-620-05	TRANSISTOR 2SC2603-EF				
		< RESISTOR >				
R116	1-249-409-11	CARBON	220	5%	1/4W	F
R216	1-249-409-11	CARBON	220	5%	1/4W	F
R502	1-249-429-11	CARBON	10K	5%	1/4W	
R504	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R505	1-249-429-11	CARBON	10K	5%	1/4W	
R506	1-249-393-11	CARBON	10	5%	1/4W	F
		< SWITCH >				
S501	1-762-151-11	SWITCH, SLIDE (COMMAND MODE)				
⚠ S502	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(E,PX)				
		< TRANSFORMER >				
⚠ T501	1-429-670-11	TRANSFORMER, POWER (US,CND)				
⚠ T501	1-429-671-11	TRANSFORMER, POWER (AEP,G,UK,AUS,SP)				
⚠ T501	1-429-672-11	TRANSFORMER, POWER (E,PX)				
**********						
*	A-4699-036-A	JOG BOARD, COMPLETE **********				
		< CAPACITOR >				
C601	1-124-584-00	ELECT	100uF	20%	10V	
		< CONNECTOR >				
* CN601	1-568-862-11	SOCKET, CONNECTOR 19P				

Ref. No.	Part No.	Description				Remark
		< DIODE >				
D601	8-719-301-49	DIODE SEL2810A-CD (▮▮)				
D602	8-719-303-02	DIODE SEL2510C-D (▷)				
		< IC >				
IC601	8-759-373-49	IC NJL54H400				
		< TRANSISTOR >				
Q601	8-729-900-89	TRANSISTOR DTC144ES				
		< RESISTOR >				
R601	1-249-415-11	CARBON	680	5%	1/4W	F
R602	1-249-407-11	CARBON	150	5%	1/4W	F
R603	1-247-807-31	CARBON	100	5%	1/4W	
R604	1-247-807-31	CARBON	100	5%	1/4W	
R721	1-249-415-11	CARBON	680	5%	1/4W	F
R722	1-249-417-11	CARBON	1K	5%	1/4W	F
R723	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R724	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R725	1-247-843-11	CARBON	3.3K	5%	1/4W	
R726	1-249-427-11	CARBON	6.8K	5%	1/4W	F
		< JOG SWITCH >				
RE601	1-762-717-11	SWITCH, JOG (DISC)				
		< SWITCH >				
S711	1-572-184-11	SWITCH, TACTILE (ENTER)				
S721	1-572-184-11	SWITCH, TACTILE (■)				
S722	1-572-184-11	SWITCH, TACTILE (▮▮)				
S723	1-572-184-11	SWITCH, TACTILE (▷)				
S724	1-572-184-11	SWITCH, TACTILE (⏮)				
S725	1-572-184-11	SWITCH, TACTILE (▷▷⏭)				
S726	1-572-184-11	SWITCH, TACTILE (CHECK)				
S727	1-572-184-11	SWITCH, TACTILE (CLEAR)				
**********						
*	1-661-465-11	L. MOTOR BOARD **********				
		< MOTOR >				
M802	A-4604-847-A	MOTOR ASSY (LOADING)				
**********						
*	1-661-467-11	L.SW BOARD **********				
		< SWITCH >				
S801	1-571-300-21	SWITCH, ROTARY (LOADING DET.)				
**********						

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

LUMINOUS MAIN

Ref. No.	Part No.	Description	Remark
*	1-661-468-11	LUMINOUS BOARD **********	
*	4-976-473-01	HOLDER (LED-S)	
		< DIODE >	
D801	8-719-055-84	DIODE GL-528VS1	

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Ref. No.	Part No.	Description	Remark
*	A-4699-023-A	MAIN BOARD, COMPLETE (US,CND) **********	
*	A-4699-024-A	MAIN BOARD, COMPLETE ********** (AEP,G,UK,E,AUS,PX,SP)	
	7-685-871-01	SCREW +BVTT 3X6 (S)	
		< CAPACITOR >	
C102	1-162-282-31	CERAMIC 100PF 10%	50V
C103	1-162-215-31	CERAMIC 47PF 5%	50V
C104	1-162-215-31	CERAMIC 47PF 5%	50V
C106	1-130-472-00	MYLAR 0.0012uF 5%	50V
C107	1-106-359-00	MYLAR 4700PF 5%	200V
C108	1-126-052-11	ELECT 100uF 20%	10V
C202	1-162-282-31	CERAMIC 100PF 10%	50V
C203	1-162-215-31	CERAMIC 47PF 5%	50V
C204	1-162-215-31	CERAMIC 47PF 5%	50V
C206	1-130-472-00	MYLAR 0.0012uF 5%	50V
C207	1-106-359-00	MYLAR 4700PF 5%	200V
C208	1-126-052-11	ELECT 100uF 20%	10V
C301	1-128-489-11	ELECT 3300uF 20%	16V
C302	1-124-360-00	ELECT 1000uF 20%	16V
C303	1-124-122-11	ELECT 100uF 20%	50V
C304	1-126-851-11	ELECT 22uF 20%	35V
C305	1-126-163-11	ELECT 4.7uF 20%	50V
C306	1-126-101-11	ELECT 100uF 20%	16V
C307	1-126-163-11	ELECT 4.7uF 20%	50V
C308	1-124-472-11	ELECT 470uF 20%	10V
C309	1-126-163-11	ELECT 4.7uF 20%	50V
C310	1-126-163-11	ELECT 4.7uF 20%	50V
C311	1-124-472-11	ELECT 470uF 20%	10V
C316	1-161-494-00	CERAMIC 0.022uF	25V
C317	1-126-052-11	ELECT 100uF 20%	10V
C318	1-161-494-00	CERAMIC 0.022uF 30%	25V
C319	1-126-022-11	ELECT 47uF 20%	16V
C320	1-126-022-11	ELECT 47uF 20%	16V
C322	1-161-494-00	CERAMIC 0.022uF 30%	25V
C327	1-162-211-31	CERAMIC 33PF 5%	50V
C328	1-126-052-11	ELECT 100uF 20%	10V
C330	1-162-207-31	CERAMIC 22PF 5%	50V
C331	1-126-052-11	ELECT 100uF 20%	10V
C332	1-164-159-11	CERAMIC 0.1uF	50V
C333	1-126-052-11	ELECT 100uF 20%	10V
C334	1-164-159-11	CERAMIC 0.1uF	50V
C335	1-164-159-11	CERAMIC 0.1uF	50V
C336	1-162-198-31	CERAMIC 8.2PF 10%	50V
C337	1-162-198-31	CERAMIC 8.2PF 10%	50V
C339	1-164-159-11	CERAMIC 0.1uF	50V
C340	1-126-052-11	ELECT 100uF 20%	16V
C351	1-136-165-00	FILM 0.1uF 5%	50V
C352	1-164-159-11	CERAMIC 0.1uF	50V
C361	1-136-165-00	FILM 0.1uF 5%	50V
C362	1-164-159-11	CERAMIC 0.1uF	50V
C366	1-164-159-11	CERAMIC 0.1uF	50V
C371	1-136-165-00	FILM 0.1uF 5%	50V
C700	1-162-306-11	CERAMIC 0.01uF 30%	16V
C710	1-162-306-11	CERAMIC 0.01uF 30%	16V
C720	1-162-306-11	CERAMIC 0.01uF 30%	16V
		< CONNECTOR >	
CN301	1-770-728-11	CONNECTOR, BOARD TO BOARD 9P	
CN302	1-770-728-11	CONNECTOR, BOARD TO BOARD 9P	
* CN303	1-568-839-11	SOCKET, CONNECTOR 23P	
CN304	1-506-468-11	PIN, CONNECTOR 3P	
* CN305	1-568-955-11	PIN, CONNECTOR 6P	
* CN306	1-568-951-11	PIN, CONNECTOR 2P	
CN307	1-568-802-11	SOCKET, CONNECTOR 19P	
* CN308	1-568-951-11	PIN, CONNECTOR 2P	
		< DIODE >	
D301	8-719-210-21	DIODE 11EQS04	
D302	8-719-210-21	DIODE 11EQS04	
D303	8-719-210-21	DIODE 11EQS04	
D304	8-719-210-21	DIODE 11EQS04	
D305	8-719-109-93	DIODE RD6.2ESB2	
D306	8-719-024-99	DIODE 11ES2-NTA2B	
D307	8-719-987-63	DIODE 1N4148M	
D308	8-719-987-63	DIODE 1N4148M	
D310	8-719-987-63	DIODE 1N4148M	
D311	8-719-987-63	DIODE 1N4148M	
D312	8-719-109-85	DIODE RD5.1ES-B2	
D313	8-719-987-63	DIODE 1N4148M	
D315	8-719-110-60	DIODE RD24ES-B	
D316	8-719-109-84	DIODE RD5.1ES-B1	
		< IC >	
IC301	8-759-330-29	IC LA5616	
IC302	8-759-821-93	IC LA5601	
IC303	8-752-872-59	IC CXP84332-028Q	
IC304	8-759-822-38	IC LA6510	
IC305	8-759-634-51	IC M5218AP	
IC307	8-759-362-47	IC CXD8567AM	
IC308	8-759-634-51	IC M5218AP	
IC309	8-759-634-51	IC M5218AP	

Ref. No.	Part No.	Description			Remark
		< COIL >			
L304	1-412-297-11	INDUCTOR 3.3uH			
		< TRANSISTOR >			
Q101	8-729-141-26	TRANSISTOR 2SC3622A-LK			
Q102	8-729-141-26	TRANSISTOR 2SC3622A-LK			
Q201	8-729-141-26	TRANSISTOR 2SC3622A-LK			
Q202	8-729-141-26	TRANSISTOR 2SC3622A-LK			
Q301	8-729-140-97	TRANSISTOR 2SB734-34			
Q302	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q303	8-729-900-65	TRANSISTOR DTA144ES			
Q304	8-729-900-65	TRANSISTOR DTA144ES			
Q305	8-729-900-65	TRANSISTOR DTA144ES			
Q306	8-729-119-76	TRANSISTOR 2SA1175-HFE			
		< RESISTOR >			
R101	1-249-436-11	CARBON	39K	5%	1/4W
R102	1-249-436-11	CARBON	39K	5%	1/4W
R103	1-249-431-11	CARBON	15K	5%	1/4W
R104	1-249-431-11	CARBON	15K	5%	1/4W
R105	1-249-437-11	CARBON	47K	5%	1/4W
R106	1-249-437-11	CARBON	47K	5%	1/4W
R108	1-249-419-11	CARBON	1.5K	5%	1/4W F
R109	1-249-419-11	CARBON	1.5K	5%	1/4W F
R110	1-249-441-11	CARBON	100K	5%	1/4W
R111	1-249-409-11	CARBON	220	5%	1/4W F
R112	1-249-409-11	CARBON	220	5%	1/4W F
R113	1-249-393-11	CARBON	10	5%	1/4W F
R115	1-249-425-11	CARBON	4.7K	5%	1/4W F
R201	1-249-436-11	CARBON	39K	5%	1/4W
R202	1-249-436-11	CARBON	39K	5%	1/4W
R203	1-249-431-11	CARBON	15K	5%	1/4W
R204	1-249-431-11	CARBON	15K	5%	1/4W
R205	1-249-437-11	CARBON	47K	5%	1/4W
R206	1-249-437-11	CARBON	47K	5%	1/4W
R208	1-249-419-11	CARBON	1.5K	5%	1/4W F
R209	1-249-419-11	CARBON	1.5K	5%	1/4W F
R210	1-249-441-11	CARBON	100K	5%	1/4W
R211	1-249-409-11	CARBON	220	5%	1/4W F
R212	1-249-409-11	CARBON	220	5%	1/4W F
R213	1-249-393-11	CARBON	10	5%	1/4W F
R215	1-249-425-11	CARBON	4.7K	5%	1/4W F
R301	1-249-431-11	CARBON	15K	5%	1/4W
R302	1-249-425-11	CARBON	4.7K	5%	1/4W F
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-438-11	CARBON	56K	5%	1/4W
R306	1-247-807-31	CARBON	100	5%	1/4W
R307	1-247-807-31	CARBON	100	5%	1/4W
R308	1-249-435-11	CARBON	33K	5%	1/4W
R309	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-249-425-11	CARBON	4.7K	5%	1/4W F

Ref. No.	Part No.	Description			Remark
R311	1-247-843-11	CARBON	3.3K	5%	1/4W
R312	1-249-429-11	CARBON	10K	5%	1/4W
R316	1-249-429-11	CARBON	10K	5%	1/4W
R317	1-249-429-11	CARBON	10K	5%	1/4W
R318	1-249-429-11	CARBON	10K	5%	1/4W
R319	1-249-429-11	CARBON	10K	5%	1/4W
R321	1-249-417-11	CARBON	1K	5%	1/4W F
R322	1-249-417-11	CARBON	1K	5%	1/4W F
R323	1-249-417-11	CARBON	1K	5%	1/4W F
R324	1-249-411-11	CARBON	330	5%	1/4W
R325	1-249-424-11	CARBON	3.9K	5%	1/4W F
R326	1-247-807-31	CARBON	100	5%	1/4W
R327	1-249-411-11	CARBON	330	5%	1/4W
R329	1-249-441-11	CARBON	100K	5%	1/4W
R330	1-249-441-11	CARBON	100K	5%	1/4W
R331	1-249-425-11	CARBON	4.7K	5%	1/4W F
R332	1-249-441-11	CARBON	100K	5%	1/4W
R333	1-249-425-11	CARBON	4.7K	5%	1/4W F
R334	1-249-425-11	CARBON	4.7K	5%	1/4W F
R335	1-249-429-11	CARBON	10K	5%	1/4W
R336	1-249-429-11	CARBON	10K	5%	1/4W
R337	1-249-421-11	CARBON	2.2K	5%	1/4W F
R338	1-249-417-11	CARBON	1K	5%	1/4W F
R339	1-249-417-11	CARBON	1K	5%	1/4W F
R340	1-249-417-11	CARBON	1K	5%	1/4W F
R342	1-249-429-11	CARBON	10K	5%	1/4W
R351	1-249-441-11	CARBON	100K	5%	1/4W
R352	1-249-441-11	CARBON	100K	5%	1/4W
R353	1-247-860-11	CARBON	16K	5%	1/4W
R354	1-249-431-11	CARBON	15K	5%	1/4W
R355	1-249-382-11	CARBON	1.2	5%	1/6W F
R356	1-249-382-11	CARBON	1.2	5%	1/6W F
R357	1-247-883-00	CARBON	150K	5%	1/4W
R358	1-249-393-11	CARBON	10	5%	1/4W F
R361	1-247-885-00	CARBON	180K	5%	1/4W
R362	1-247-885-00	CARBON	180K	5%	1/4W
R363	1-247-860-11	CARBON	16K	5%	1/4W
R364	1-249-431-11	CARBON	15K	5%	1/4W
R365	1-249-382-11	CARBON	1.2	5%	1/6W F
R366	1-249-382-11	CARBON	1.2	5%	1/6W F
R367	1-247-883-00	CARBON	150K	5%	1/4W
R368	1-249-393-11	CARBON	10	5%	1/4W F
R373	1-249-427-11	CARBON	6.8K	5%	1/4W F
R374	1-247-843-11	CARBON	3.3K	5%	1/4W
R375	1-249-439-11	CARBON	68K	5%	1/4W
R376	1-249-427-11	CARBON	6.8K	5%	1/4W F
R377	1-249-427-11	CARBON	6.8K	5%	1/4W F
R378	1-249-417-11	CARBON	1K	5%	1/4W F
R385	1-249-429-11	CARBON	10K	5%	1/4W
R700	1-249-427-11	CARBON	6.8K	5%	1/4W F
R710	1-249-427-11	CARBON	6.8K	5%	1/4W F
R720	1-249-427-11	CARBON	6.8K	5%	1/4W F

MAIN | **RAY-CATCHER** | **T.MOTOR** | **T.SENS**

Ref. No.	Part No.	Description				Remark
		< VIBRATOR >				
X301	1-579-175-11	VIBRATOR, CERAMIC (10MHz)				
X302	1-767-155-11	VIBRATOR, CRYSTAL (33.8688MHz)				
**********						
*	1-661-469-11	RAY-CATCHER BOARD				
		**********				
*	4-985-300-01	HOLDER (P-T)				
		< TRANSISTOR >				
Q801	8-729-926-31	PHOTO TRANSISTOR PT483F1S				
**********						
*	1-661-466-11	T.MOTOR BOARD				
		**********				
		< MOTOR >				
M801	A-4604-847-A	MOTOR ASSY (TABLE)				
**********						
*	1-661-470-11	T.SENS BOARD				
		**********				
		< CONNECTOR >				
CN802	1-506-481-11	PIN, CONNECTOR 2P				
CN803	1-506-481-11	PIN, CONNECTOR 2P				
		< IC >				
IC801	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391				
IC802	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391				
IC803	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391				
		< RESISTOR >				
R801	1-249-416-11	CARBON	820	5%	1/4W	F
R802	1-249-416-11	CARBON	820	5%	1/4W	F
R803	1-249-416-11	CARBON	820	5%	1/4W	F
R804	1-249-415-11	CARBON	680	5%	1/4W	F
**********						
		MISCELLANEOUS				
		**********				
4	1-773-183-11	WIRE (FLAT TYPE) (23 CORE)				
5	1-777-345-11	WIRE (FLAT TYPE) (19 CORE)				
⚠12	1-569-007-11	ADAPTOR, CONVERSION 2P (E,PX)				
304	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)				
⚠306	8-848-376-01	OPTICAL PICK-UP BLOCK KSS-213B/S-N				
⚠CNP901	1-575-042-21	CORD, POWER (US,CND)				
⚠CNP901	1-575-651-21	CORD, POWER (AEP,G,SP)				
⚠CNP901	1-696-027-11	CORD, POWER (E,PX)				

Ref. No.	Part No.	Description	Remark
⚠CNP901	1-696-845-11	CORD, POWER (AUS)	
⚠CNP901	1-751-529-11	CORD, POWER (UK)	
FL701	1-517-517-11	INDICATOR TUBE, FLUORESCENT	
M101	X-2626-234-1	T.T CHASSIS ASSY (MG)(K)(SPINDLE)	
M102	X-2625-769-1	MOTOR GEAR ASSY (MB)(RP)(SLED)	
M801	A-4604-847-A	MOTOR ASSY, LOADING (TABLE)	
M802	A-4604-847-A	MOTOR ASSY, LOADING (LOADING)	
⚠T501	1-429-670-11	TRANSFORMER, POWER (US,CND)	
⚠T501	1-429-671-11	TRANSFORMER, POWER (AEP,G,UK,AUS,SP)	
⚠T501	1-429-672-11	TRANSFORMER, POWER (E,PX)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-800-11	REMOTE COMMANDER (RM-DX200)	
	1-558-271-11	CORD, CONNECTION (AUDIO 108cm)	
	1-777-172-11	CORD, CONNECTION (CONTROL-A1)(CND)	
	3-707-584-21	COVER, BATTERY (FOR RM-DX200)	
	3-810-765-11	MANUAL,COMMONNESS INSTRUCTION (FOR CONTROL-A1) (ENGLISH)(US,AUS)	
	3-810-765-21	MANUAL,COMMONNESS INSTRUCTION (FOR CONTROL-A1) (ENGLISH,FRENCH,GERMAN,SPANISH,DUTCH, SWEDISH,ITALIAN,PORTUGUESE,CHINESE)	(EXCEPT US,AUS)
	3-856-765-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,SWEDISH)	(EXCEPT US,AUS)
	3-856-765-21	MANUAL, INSTRUCTION (ENGLISH)(US,AUS)	
	3-856-765-31	MANUAL, INSTRUCTION (CHINESE)(SP)	
	3-856-765-41	MANUAL, INSTRUCTION (GERMAN,DUTCH,ITALIAN,PORTUGUESE)	(AEP,G)
	4-984-086-01	BOOKLET (100)	
*	4-983-337-01	INDIVIDUAL, CARTON (SP)	
*	4-983-803-01	CUSHION	
*	4-983-804-01	INDIVIDUAL, CARTON (US,CND)	
*	4-983-805-01	INDIVIDUAL, CARTON (AEP,G)	
*	4-983-806-01	INDIVIDUAL, CARTON (UK)	
*	4-985-680-01	INDIVIDUAL, CARTON (AUS)	
*	4-986-415-01	INDIVIDUAL, CARTON (E,PX)	
**********			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#5	7-685-871-09	SCREW +BVTT 3X6 (S)	
#6	7-682-947-01	SCREW +PSW 3X6	
#7	7-682-548-04	SCREW +BVTT 3X8 (S)	
#8	7-624-111-04	STOP RING 7.0, TYPE -E	
#9	7-624-106-04	STOP RING 3.0, TYPE -E	
#10	7-621-772-20	SCREW +B 2X5	
#11	7-682-552-09	SCREW +B 3X16	
#12	7-621-775-00	SCREW +B 2.6X3	
#13	7-621-772-30	SCREW +B 2X6	
#15	7-624-109-04	STOP RING 5.0, TYPE -E	
#16	7-621-775-20	SCREW +B 2.6X5	
#17	7-682-255-15	SCREW +P 2X3	

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Sony Corporation
Home A&V Products Company

CDP-CX200

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
PX Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : AGING MODE

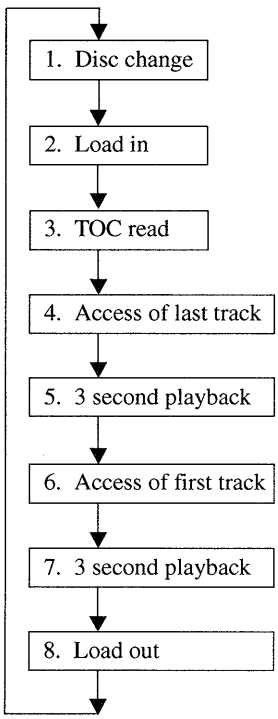
SECTION 4
TEST MODE

AGING MODE

Aging Mode

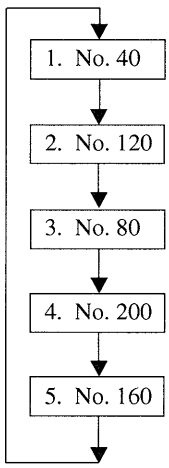
- Mode which repeatedly changes and plays back discs automatically in the unit.
- It will repeat aging as long as no errors occur.
- If an error occurs during aging, it will stop all servos, motors, etc. instantaneously, display the error number, and stop operations. However, the stopping conditions differ according to whether the unit is equipped with the "self-protection function during errors" described later.
  The function serves to maintain the state of the unit when errors occur.

Sequence of Aging Mode



Order of Disc Change

(1 cycle takes 3 minutes)

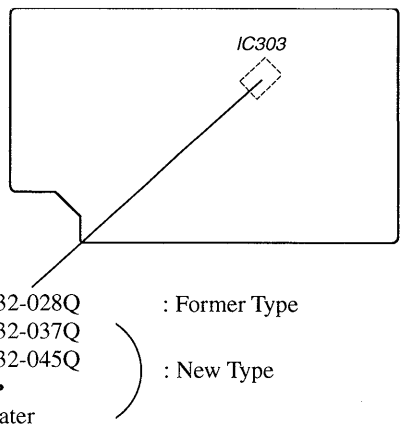


Microcomputer Version and special Functions of Aging Mode

The operations in the aging mode differ according to the version of the microcomputer used (whether it is old or new.)

The version can be differentiated as follows.

[MAIN Board] –Component Side – IC303



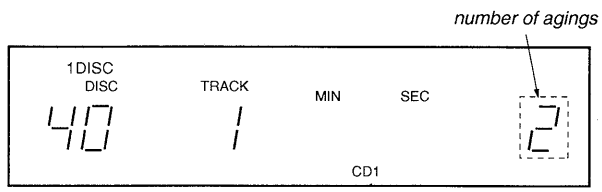
Special Functions in Aging Mode

	Former Type	New Type
Disc setting mode*1	None	Present
Self protection function during errors*2	None (Stops immediately when errors occur)	Present/none (Switchable)
Aging cycle count function *3	None	Present

*1 Disc setting mode:
5 discs are set before setting the aging mode. This mode makes the setting of these discs more easy.

*2 Self protection function during errors:
Function which voluntarily corrects errors which occur during normal operations by retries.
If this function is not provided, all operations will be stopped without retiring. It is suitable for checking errors with low reproducibility.
If this function is provided, and errors can be corrected by retries, aging will be continued without stopping.

*3 Aging cycle count function:
Functions which displays the number of agings carried out on the Fluorescent indicator tube in numbers. One aging cycle consists of five discs.



Aging Method

* The procedure differs according to the type of microcomputer used (whether it is new or old).

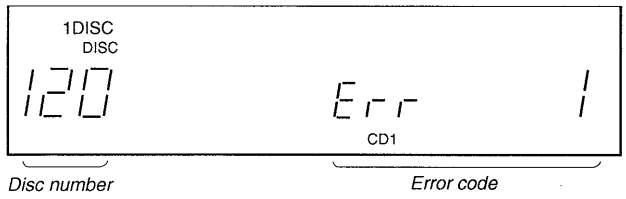
In the case of the new type:

1. Change the [COMMAND MODE] switch (S501) on set to [CD1].
2. Turn ON the power of the unit. Open the front cover.
3. Press the AGING START button of the remote commander for aging mode (J-2501-123-A).
4. When the disc set mode is set, the ▷ and ▮▮ LEDs blink.
5. Rotate the JOG dial. The slits (No. 40, 80, 120, 160, 200) for setting the discs will come forward. Insert the discs into these slits. Do not set the discs in other slits.
6. Set whether the self-protection function during errors is equipped with the unit. Press the REPEAT button. If "REPEAT" is displayed on the Fluorescent indicator tube, it means the function is provided. If "REPEAT" is not displayed, it means the function is not provided.
7. Press the ▷ button.
8. The ▷ LED blinks, the aging mode is set, and aging is started.
9. The aging cycle lasts 3 minutes. If errors occur during aging, the error number will be displayed on the Fluorescent indicator tube. (Refer to the following table for the details of the errors.)
10. Aging will be repeated as long as no errors occur.
11. After each aging cycle, the number displayed on the Fluorescent indicator tube will increase.
12. To end aging, press the POWER button

In the case of the Former type:

1. Change the [COMMAND MODE] switch (S501) on set to [CD1].
2. Set the disc to No. 40, 80, 120, 160, 200. Do not set to other numbers.
3. Press the AGING START button of the remote commander for aging mode (J-2501-123-A).
4. The ▷ LED blinks, the aging mode is set, and aging is started.
5. The aging cycle lasts 3 minutes. If errors occur during aging, the error number will be displayed on the Fluorescent indicator tube.
6. Aging will be repeated as long as no errors occur.
7. To end aging, press the POWER button.

Error Display



Note) The error codes for the former type are displayed in hexadecimal digits.
Refer to the conversion table.

Hexadecimal→Decimal Conversion Table

Hexa-decimal	Deci-mal	Hexa-decimal	Deci-mal	Hexa-decimal	Deci-mal	Hexa-decimal	Deci-mal
01	01	15	21	1F	31	29	41
02	02	16	22	20	32	2A	42
03	03	17	23	21	33	2B	43
04	04	18	24	22	34	2C	44
05	05	19	25	23	35	2D	45
06	06	1A	26	24	36	2E	46
		1B	27	25	37	2F	47

Error code

Code number	Name	Contents
Err 01	DISC sensor check 1	No disc in the specified slit
Err 02	DISC sensor check 2	Disc in other slits
Err 03	Table operation check 1	Table motor current over
Err 04	Table operation check 2	No table sensor input
Err 05	Loading operation check 1	Load in timeover
Err 06	Loading operation check 2	Load out timeover
Err *1	BU related check 1	Access timeover
Err *2	BU related check 2	High speed search NG
Err *3	BU related check 3	Q data read error
Err *4	BU related check 4	BU operation (from focus search to until signal can be read) timeover
Err *5	BU related check 5	GFS monitor error
Err *6	BU related check 6	Focus cannot be imposed by focus search
Err *7	BU related check 7	Auto focus bias adjustment cannot be performed

The * numbers mean the following according to the state of the unit during aging
2 : From chucking to end of TOC read
3 : From end of TOC read to end of last track playback
4 : From end of last track playback to end of first track playback

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Home A&V Products Company

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CDP-CX200

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
PX Model

SUPPLEMENT-2

File this supplement with the service manual.

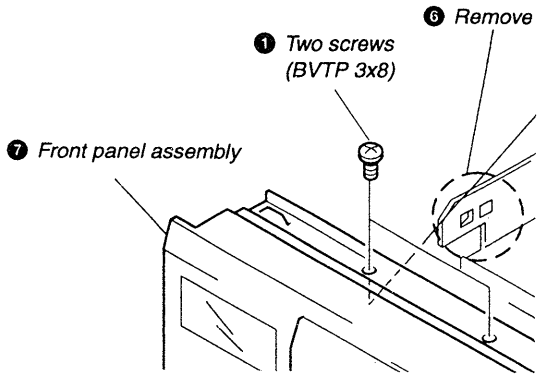
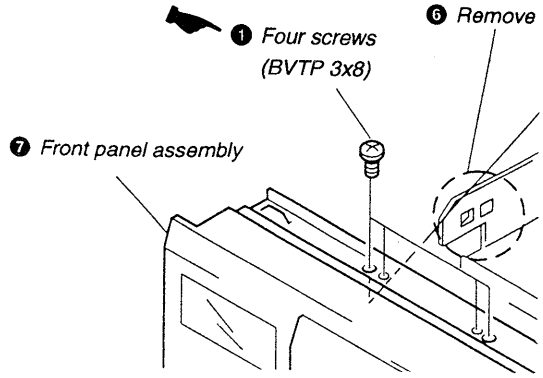
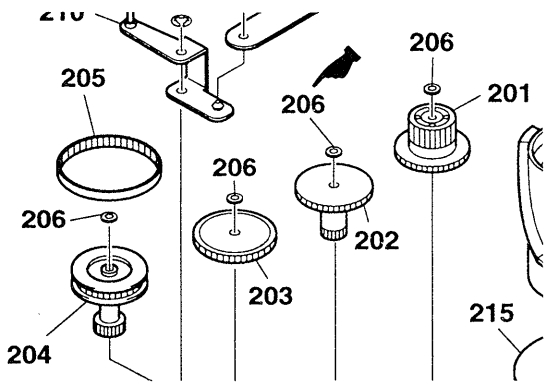
Subject : 1. CORRECTION
2. PARTS CHANGED
3. DISC SENSOR ADJUSTMENT
4. BOARD AND CIRCUIT CHANGE

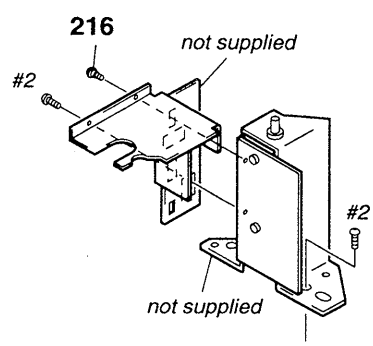
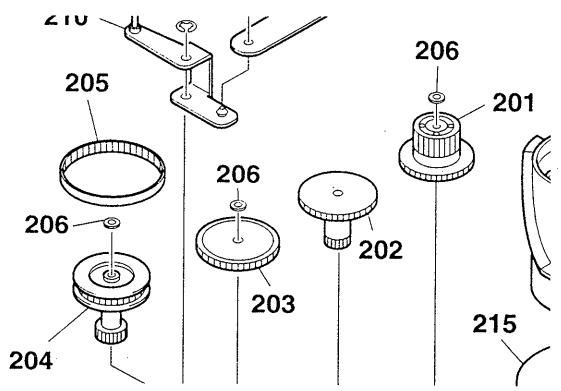
(ECN-CD600998)

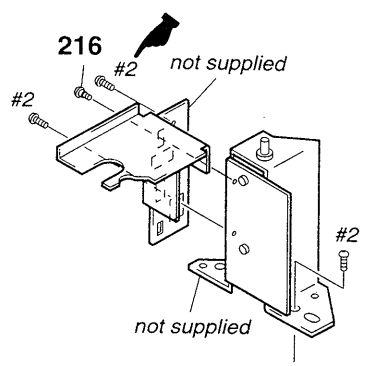
1. CORRECTION

• Correct your service manual as shown below.

☛ : indicates corrected portion.

<table>
<tr><th>Page</th><th>INCORRECT</th><th>CORRECT</th></tr>
<tr><td>9</td><td> 
</td><td> 
</td></tr>
<tr><td>14</td><td>SENSOR ALIGNMENT
If the disc table swings to the left and right just before the disc is chucked, perform the following adjustment.</td><td>SENSOR ALIGNMENT
Perform this adjustment after the “holder (disc A) adjustment”.
If the disc table swings to the left and right just before the disc is chucked, perform the following adjustment.</td></tr>
<tr><td></td><td>Ref. No. Part No. Description Remark
*** EXPLODED VIEWS ***</td><td>Ref. No. Part No. Description Remark
*** EXPLODED VIEWS ***</td></tr>
<tr><td>52</td><td>———————</td><td>FL701 1-517-517-11 INDICATOR TUBE, FLUORESENT</td></tr>
<tr><td>53</td><td>FL701 1-517-517-11 INDICATOR TUBE, FLUORESENT</td><td>———————</td></tr>
<tr><td>54</td><td> 

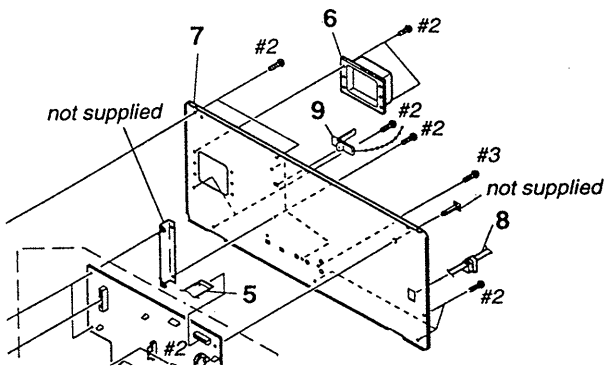
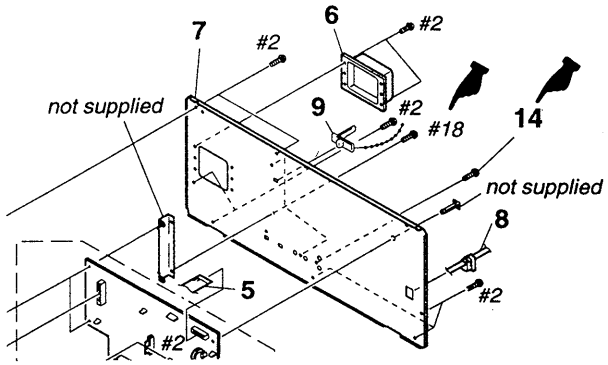
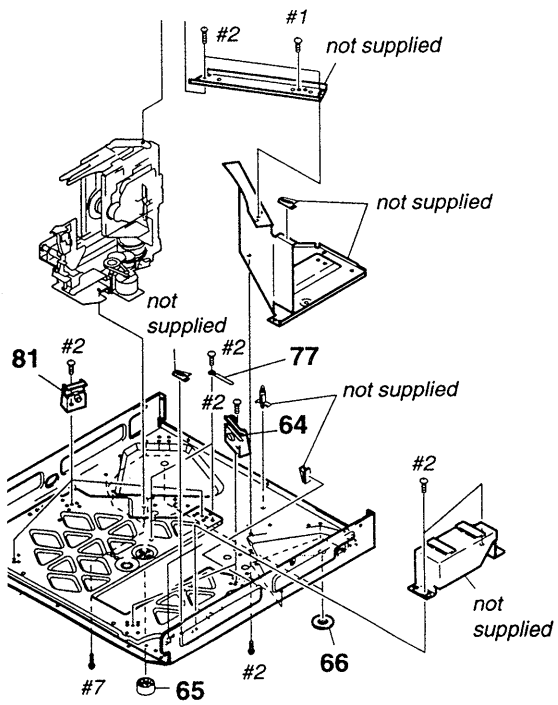
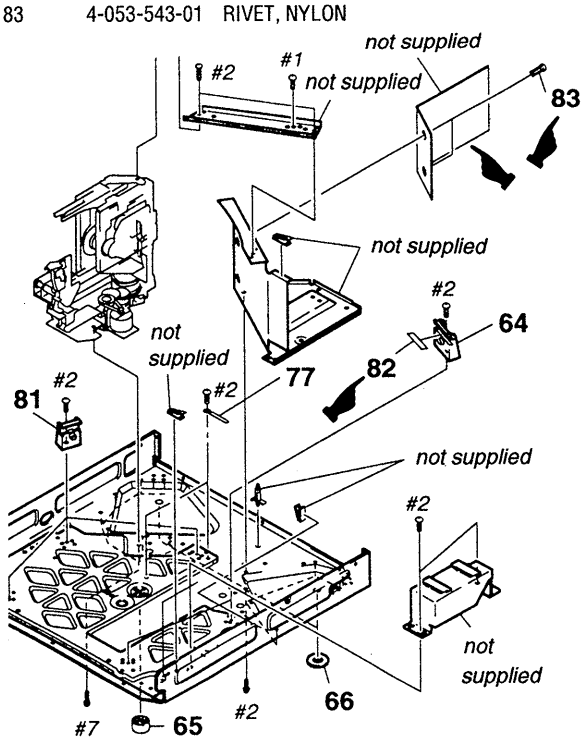

</td><td> 


</td></tr>
</table>

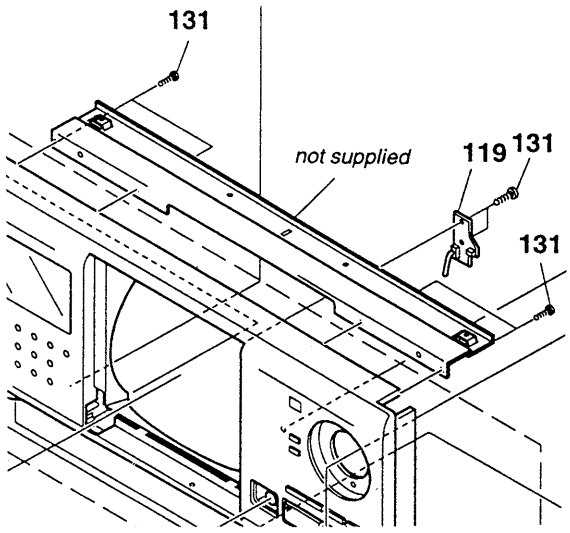
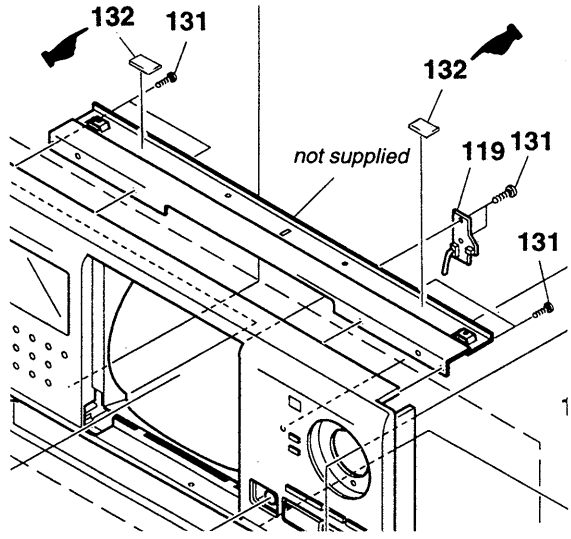
Page	INCORRECT				CORRECT			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
62		*** ACCESSORIES & PACKING MATERIALS ***				*** ACCESSORIES & PACKING MATERIALS ***		
		3-707-584-21	COVER, BATTERY (FOR RM-DX200)			4-981-643-01	COVER, BATTERY (FOR RM-DX200)	
63		*** HARDWARE LIST ***				*** HARDWARE LIST ***		
	#4	7-685-534-19	SCREW +BTP2.6X8 TYPE2 N-S			not used		
					#18	7-682-547-04	SCREW +BV3X6, S TIGHT	

2. PARTS CHANGED

: indicates changed portion.

Page	FORMER				NEW			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
50		*** EXPLODED VIEWS ***				*** EXPLODED VIEWS ***		
					14	3-704-515-01	SCREW (BV/RING)	
								
51	* 74	3-378-433-01	CUSHION, SARANET		* 74	3-378-434-01	CUSHION, SARANET	
	75	4-985-553-01	CUSHION		75	4-985-553-11	CUSHION	
					82	4-985-574-01	SPACER (ROLLER)	
					83	4-053-543-01	RIVET, NYLON	
								

: indicates changed portion.

Page	FORMER				NEW			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
52	* 129	A-4699-036-A	JOG BOARD, COMPLETE		* 129	A-4699-036-A	JOG BOARD, COMPLETE (US, CND, E, AUS, PX, SP)	
					* 129	A-4699-507-A	JOG BOARD, COMPLETE (AEP, G, UK)	
					132	4-985-553-21	CUSHION	
								
53	157	4-982-854-01	HOLDER (DISC A)		157	4-988-143-01	HOLDER (DISC A2)	
59	*** ELECTRICAL PARTS LIST ***				*** ELECTRICAL PARTS LIST ***			
	*	A-4699-036-A	JOG BOARD, COMPLETE **********		*	A-4699-036-A	JOG BOARD, COMPLETE ********** (US, CND, E, AUS, PX, SP)	
					*	A-4699-507-A	JOG BOARD, COMPLETE (AEP, G, UK) **********	

- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  AUS : Australian model

3. DISC SENSOR ADJUSTMENT

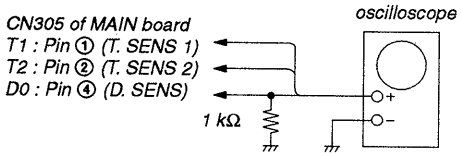
The adjusting volume RV301 is added instead of R308 on the MAIN BOARD in the middle of producing. Perform this adjustment for a set which has RV301.

Disc Sensor Adjustment

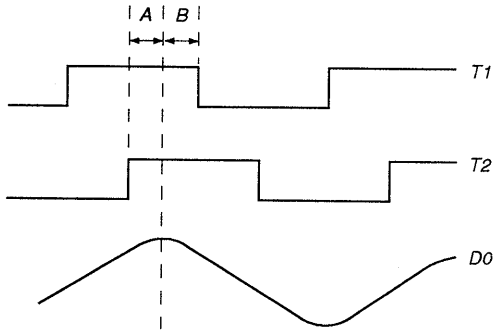
Perform this adjustment after completing all adjustments of the mechanism section.

If not performed accurately, the presence of the disc may not be detected properly.

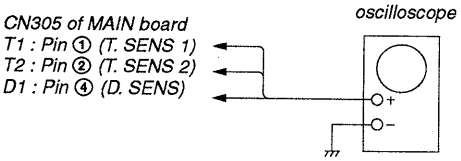
Connection 1:



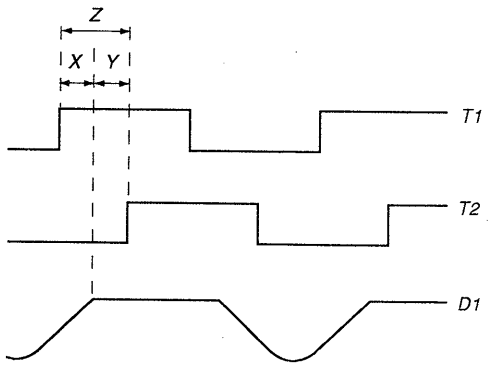
Waveform 1:



Connection 2:

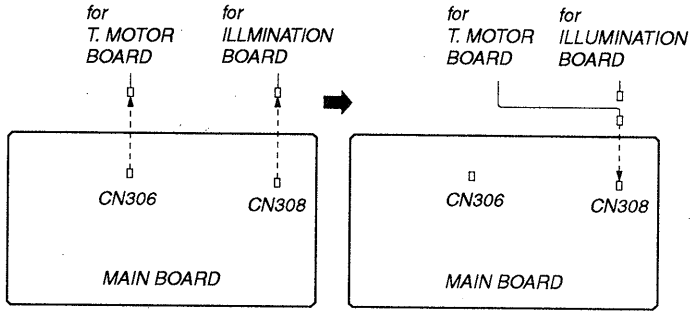


Waveform 2

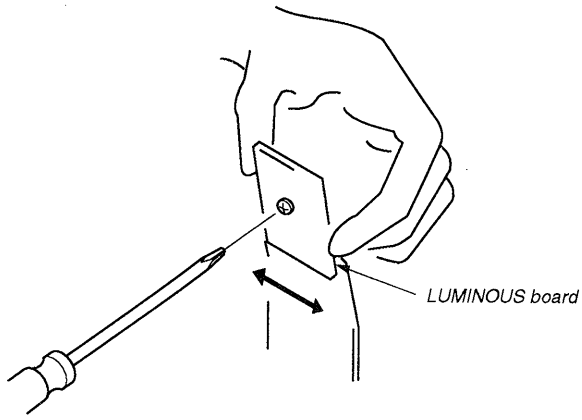


Procedure:

1. Connect the oscilloscope to Pins ①, ②, and ④ of CN305 of the MAIN board. Also connect a 1 kΩ resistor to Pin ④ at the same time. (Connection 1)
2. Disconnect the CN308 (2P) and CN306 (2P) cables of the MAIN board. Connect the cables connected to CN306 (connected to the T. MOTOR board) to CN308 .

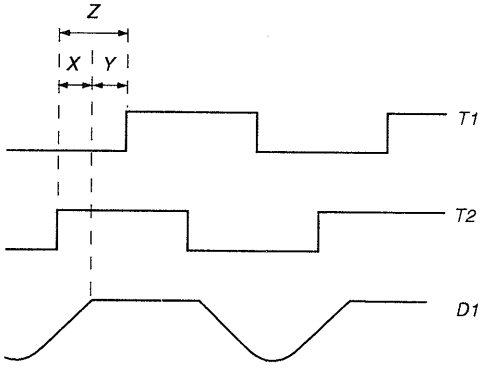


3. Open the front cover. (If closed, malfunctions by incorrect operations may result.)
4. Check that no discs are loaded in the unit, and press the POWER button to turn ON the power.
5. The rotary table will continue rotating in the clockwise direction.
6. Observe the waveform at that time on the oscilloscope.
7. Loosen the screw securing the LUMINOUS board slightly.
8. Slide the LUMINOUS board to the left and right so that the peak of the D0 waveform is at the center between the descending point of the T1 waveform and ascending point of the T2 waveform. (Waveform 1) After adjusting, apply locking compound.



9. Disconnect the resistor connected to Pin ④ of CN305 of the MAIN board. (Connection 2)
10. Observe the waveform on the oscilloscope. (Waveform 2)
11. Adjust RV301 of the MAIN board so that the waveform on the oscilloscope satisfies the following adjustment value 1.
12. Connect the connectors disconnected in Step 2 at their original positions.
13. Close the front cover, and rotate the JOG dial in the counterclockwise direction continuously so that the rotary table rotates continuously in the counterclockwise direction.
14. Observe the waveform on the oscilloscope and confirm that it satisfies the adjustment value 2 (waveform 3). If it does not, adjust RV301 of the MAIN board.

Waveform 3:



15. After the adjustment, load a disc only in slit 1, close the front cover, and press the POWER button to turn off the power.
16. Press the POWER button while pressing the ENTER button to turn on the power.
17. If the rotary table makes one round, and "YES" is displayed on the fluorescent indicator tube after it stops, it means that the adjustment has been performed properly.

Adjustment value 1:

At the shoulder part of waveform D1, T1 becomes H and T2 becomes L, and at the same time, the Y width must not be smaller than 1/4 of the Z width.

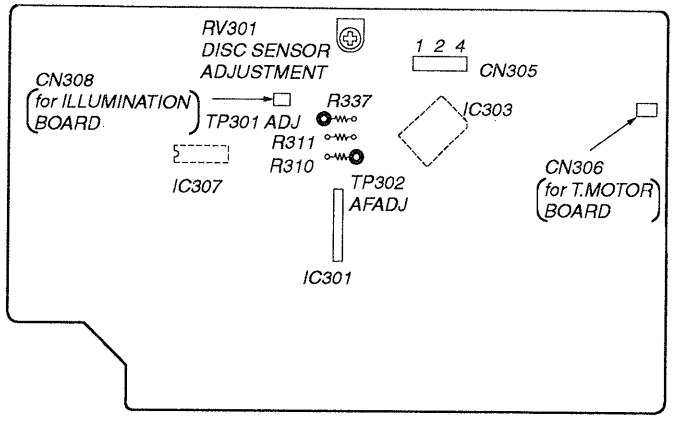
In order to satisfy this value more easily, adjust so that X=Y approximately and observe the deviation of the waveform.

Adjustment value 2:

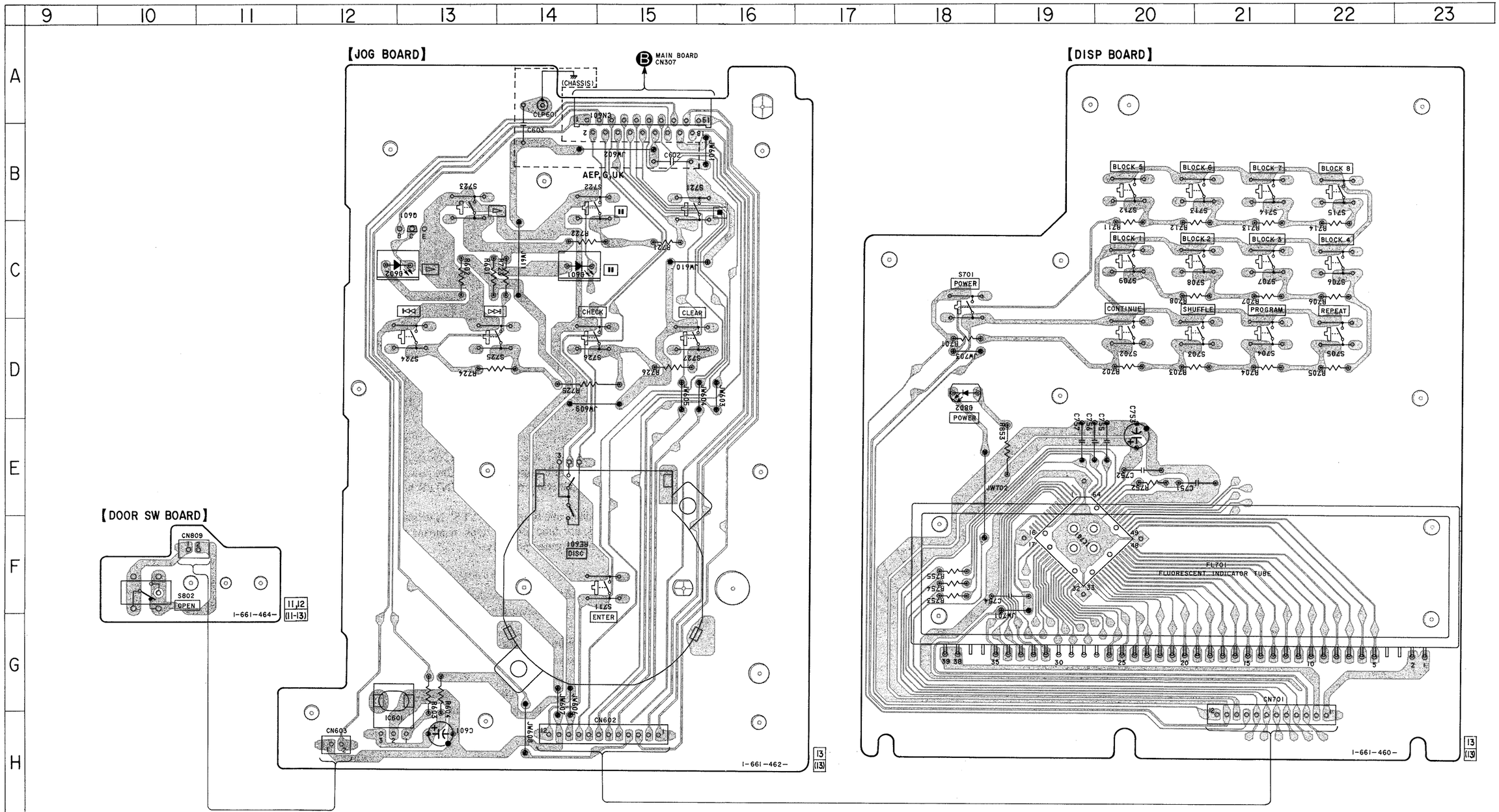
At the shoulder part of waveform D1, T1 becomes H and T2 becomes L, and at the same time, the Y width must not be smaller than 1/4 of the Z width.

Adjustment Location:

[MAIN BOARD] — Component Side —



PRINTED WIRING BOARD — BD, DISP SECTION — See page 32 – 34. Location A – H, 10 – 23



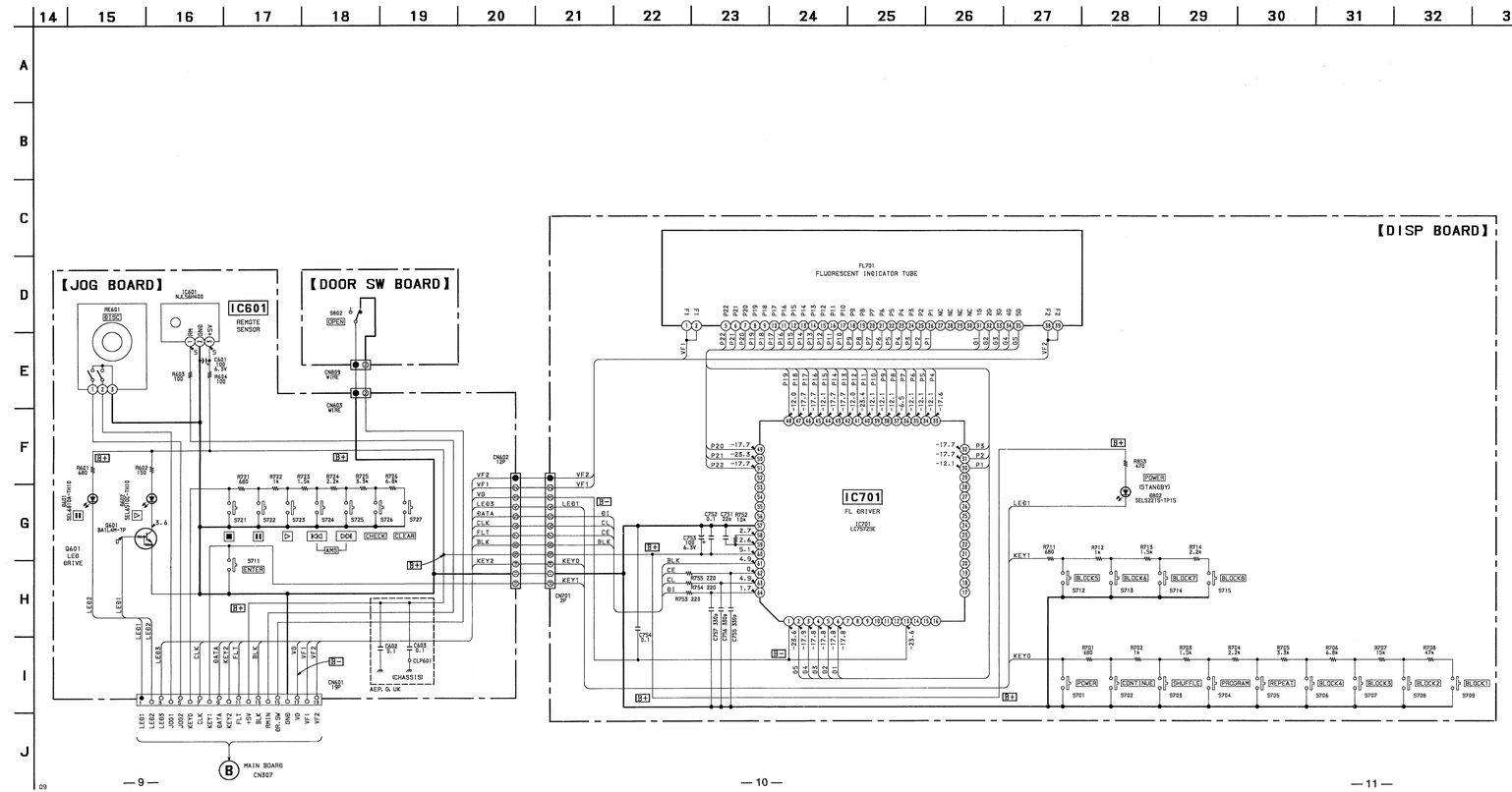
Note:

- ⟜—— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enable seeing.

SCHEMATIC DIAGRAM — BD, DISP SECTION — See page 36 – 38. Location C – J, 14 – 32

- **Semiconductor Location**

Ref. No.	Location
D601	C-14
D602	C-12
D802	D-18
IC601	H-12
IC701	F-19
Q601	C-13



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▭ : panel designation.

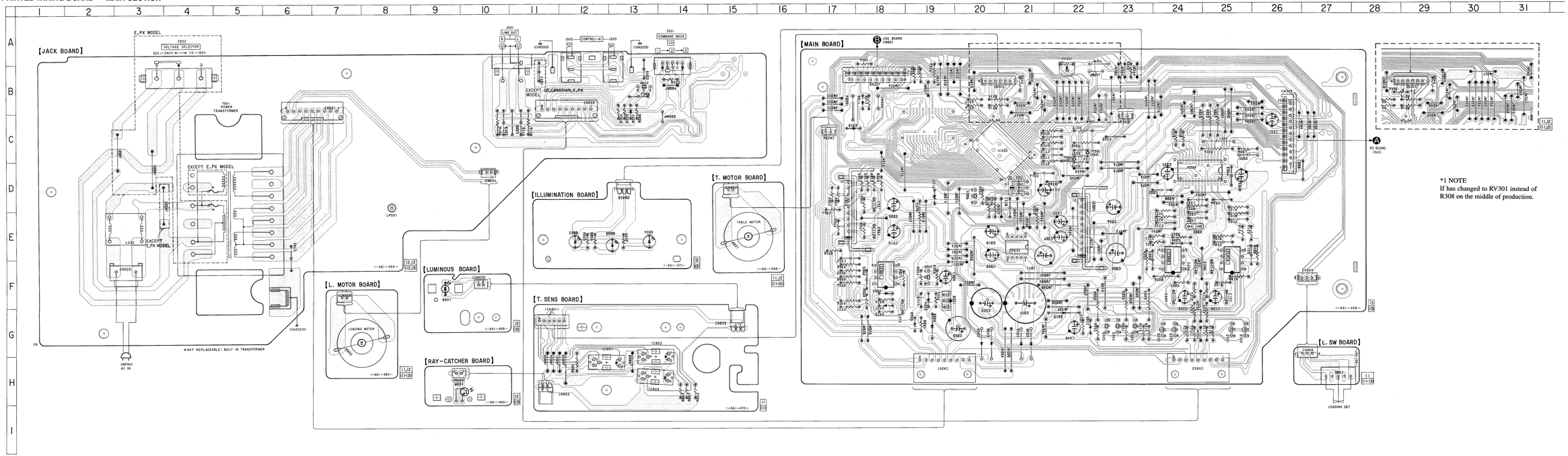
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- B− : B− Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark: STOP
- Voltages are taken with a VOM (Input impedence 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : C8

PRINTED WIRING BOARD — MAIN SECTION —

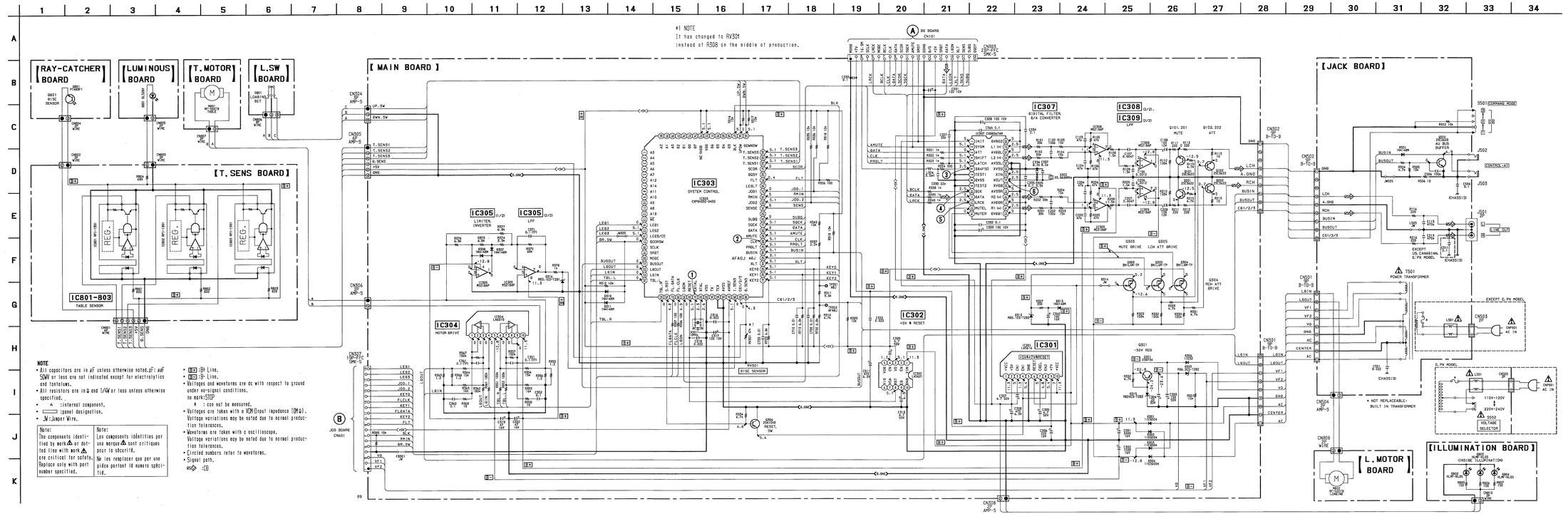
- **Semiconductor Location**

Ref. No.	Location
D301	G-21
D302	G-21
D303	G-20
D304	G-20
D305	G-19
D306	G-19
D307	G-18
D308	F-18
D310	C-17
D311	B-17
D312	G-22
D313	G-21
D315	G-19
D316	D-19
D501	C-13
D801	F-9
D802	E-12
D803	E-12
D804	E-13
IC301	E-22
IC302	E-21
IC303	C-20
IC304	D-17
IC305	F-18
IC307	D-24
IC308	F-25
IC309	F-24
IC801	G-12
IC802	G-13
IC803	H-13
Q101	G-25
Q102	G-25
Q201	G-24
Q202	G-24
Q301	F-19
Q302	F-19
Q303	G-23
Q304	G-23
Q305	G-22
Q306	D-20
Q502	B-13
Q801	H-9



Note:
- ⟷ : parts extracted from the component side.
- △ : internal component.
- ▭ : Pattern from the side which enable seeing.

SCHEMATIC DIAGRAM — MAIN SECTION—



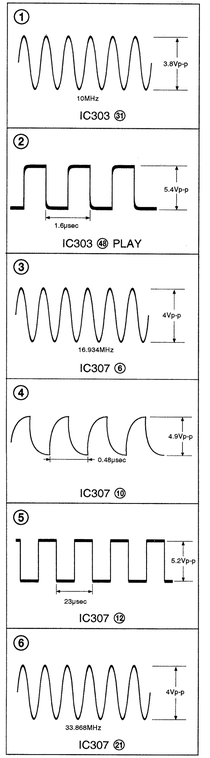
NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Δ : internal component.
- ▭ : panel designation.
- ⊿ : Jumper Wire.

Note:	Note:
The components identified by mark⚠ or dotted line with mark⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- E1 : 5V Line.
- E2 : 3V Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:STOP
  ▶ : can not be measured.
- Voltages are taken with a VOM(Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

• Waveforms



ELECTRICAL PARTS LIST

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB..., uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  AUS : Australian model

Ref. No.	Part No.	Description			Remark
*	A-4699-037-A	DISP BOARD, COMPLETE			
		**********			
*	4-982-786-01	HOLDER (FL)			
		< CAPACITOR >			
C751	1-162-207-31	CERAMIC	22PF	5%	50V
C752	1-164-159-11	CERAMIC	0.1uF		50V
C753	1-124-584-00	ELECT	100uF	20%	10V
C754	1-164-159-11	CERAMIC	0.1uF		50V
C755	1-162-288-31	CERAMIC	330PF	10%	50V
C756	1-162-288-31	CERAMIC	330PF	10%	50V
C757	1-162-288-31	CERAMIC	330PF	10%	50V
		< DIODE >			
D802	8-719-046-44	DIODE SEL5221S (POWER)			
		< FLUORESCENT INDICATOR >			
FL701	1-517-517-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	8-759-399-58	IC LC75725E			
		< RESISTOR >			
R701	1-249-415-11	CARBON	680	5%	1/4W F
R702	1-249-417-11	CARBON	1K	5%	1/4W F
R703	1-249-419-11	CARBON	1.5K	5%	1/4W F
R704	1-249-421-11	CARBON	2.2K	5%	1/4W F
R705	1-247-843-11	CARBON	3.3K	5%	1/4W
R706	1-249-427-11	CARBON	6.8K	5%	1/4W F
R707	1-249-431-11	CARBON	15K	5%	1/4W
R708	1-249-437-11	CARBON	47K	5%	1/4W
R711	1-249-415-11	CARBON	680	5%	1/4W F
R712	1-249-417-11	CARBON	1K	5%	1/4W F
R713	1-249-419-11	CARBON	1.5K	5%	1/4W F
R714	1-249-421-11	CARBON	2.2K	5%	1/4W F
R752	1-249-429-11	CARBON	10K	5%	1/4W
R753	1-249-409-11	CARBON	220	5%	1/4W F
R754	1-249-409-11	CARBON	220	5%	1/4W F
R755	1-249-409-11	CARBON	220	5%	1/4W F
R853	1-249-413-11	CARBON	470	5%	1/4W F

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S701	1-572-184-11	SWITCH, TACTILE (POWER)			
S702	1-572-184-11	SWITCH, TACTILE (CONTINUE))			
S703	1-572-184-11	SWITCH, TACTILE (SHUFFLE)			
S704	1-572-184-11	SWITCH, TACTILE (PROGRAM)			
S705	1-572-184-11	SWITCH, TACTILE (REPEAT)			
S706	1-572-184-11	SWITCH, TACTILE (BLOCK 4)			
S707	1-572-184-11	SWITCH, TACTILE (BLOCK 3)			
S708	1-572-184-11	SWITCH, TACTILE (BLOCK 2)			
S709	1-572-184-11	SWITCH, TACTILE (BLOCK 1)			
S712	1-572-184-11	SWITCH, TACTILE (BLOCK 5)			
S713	1-572-184-11	SWITCH, TACTILE (BLOCK 6)			
S714	1-572-184-11	SWITCH, TACTILE (BLOCK 7)			
S715	1-572-184-11	SWITCH, TACTILE (BLOCK 8)			
**********					
*	1-661-464-11	DOOR SW BOARD			
		**********			
		< SWITCH >			
S802	1-762-386-11	SWITCH, PUSH (OPEN)			
**********					
*	1-661-471-11	ILLUMINATION BOARD			
		**********			
		< CONNECTOR >			
CN810	1-506-481-11	PIN, CONNECTOR 2P			
		< DIODE >			
D802	8-719-059-65	DIODE HLMF-KL05 (INSIDE ILLUMINATION)			
D803	8-719-059-65	DIODE HLMF-KL05 (INSIDE ILLUMINATION)			
D804	8-719-059-65	DIODE HLMF-KL05 (INSIDE ILLUMINATION)			
		< RESISTOR >			
R805	1-249-407-11	CARBON	150	5%	1/4W F
R806	1-249-407-11	CARBON	150	5%	1/4W F
R807	1-249-407-11	CARBON	150	5%	1/4W F
**********					

JACK | JOG

Ref. No.	Part No.	Description			Remark
*	1-661-459-11	JACK BOARD **********			
*	4-962-200-01	PLATE (TR), GROUND			
		< CAPACITOR >			
C113	1-162-290-31	CERAMIC	470PF	10%	50V
C213	1-162-290-31	CERAMIC	470PF	10%	50V
C501	1-161-494-00	CERAMIC	0.022uF		25V
C504	1-164-159-11	CERAMIC	0.1uF		50V
C506	1-162-282-31	CERAMIC	100PF	10%	50V
C511	1-164-159-11	CERAMIC	0.1uF		50V (EXCEPT US,CND,E)
		< CONNECTOR >			
CN501	1-770-724-11	CONNECTOR, BOARD TO BOARD 9P			
CN502	1-770-724-11	CONNECTOR, BOARD TO BOARD 9P			
CN503	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
* CN504	1-568-951-11	PIN, CONNECTOR 2P			
		< DIODE >			
D501	8-719-987-63	DIODE 1N4148M			
		< JACK >			
J501	1-770-719-11	JACK, PIN 2P (LINE OUT)			
* J502	1-764-188-11	JACK (SMALL TYPE)(DIA. 3.5)(CONTROL A1)			
* J503	1-764-188-11	JACK (SMALL TYPE)(DIA. 3.5)(CONTROL A1)			
		< COIL >			
⚠L501	1-421-915-11	COIL, LINE FILTER			
		< TRANSISTOR >			
Q502	8-729-620-05	TRANSISTOR 2SC2603-EF			
		< RESISTOR >			
R116	1-249-409-11	CARBON	220	5%	1/4W F
R216	1-249-409-11	CARBON	220	5%	1/4W F
R502	1-249-429-11	CARBON	10K	5%	1/4W
R504	1-249-425-11	CARBON	4.7K	5%	1/4W F
R505	1-249-429-11	CARBON	10K	5%	1/4W
R506	1-249-393-11	CARBON	10	5%	1/4W F
		< SWITCH >			
S501	1-762-151-11	SWITCH, SLIDE (COMMAND MODE)			
⚠S502	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(E,PX)			
		< TRANSFORMER >			
⚠T501	1-429-670-11	TRANSFORMER, POWER (US,CND)			
⚠T501	1-429-671-11	TRANSFORMER, POWER (AEP,G,UK,AUS,SP)			
⚠T501	1-429-672-11	TRANSFORMER, POWER (E,PX)			

Ref. No.	Part No.	Description			Remark
*	A-4699-036-A	JOG BOARD, COMPLETE (US,CND,E,AUS,PX,SP) **********			
*	A-4699-507-A	JOG BOARD, COMPLETE (AEP,G,UK) **********			
		< CAPACITOR >			
C601	1-124-584-00	ELECT	100uF	20%	10V
C602	1-164-159-11	CERAMIC	0.1uF		50V (AEP,G,UK)
C603	1-164-159-11	CERAMIC	0.1uF		50V (AEP,G,UK)
		<BASE POST >			
CLP601	1-690-880-41	LEAD (WITH CONNECTOR) (AEP,G,UK)			
		< CONNECTOR >			
* CN601	1-568-862-11	SOCKET, CONNECTOR 19P			
		< DIODE >			
D601	8-719-313-45	DIODE SEL6810A-TH10 (▮▮)			
D602	8-719-303-02	DIODE SEL2510C-D (▷)			
		< IC >			
IC601	8-759-459-84	IC NJL56H400			
		< TRANSISTOR >			
Q601	8-729-900-89	TRANSISTOR DTC144ES			
		< RESISTOR >			
R601	1-249-415-11	CARBON	680	5%	1/4W F
R602	1-249-407-11	CARBON	150	5%	1/4W F
R603	1-247-807-31	CARBON	100	5%	1/4W
R604	1-247-807-31	CARBON	100	5%	1/4W
R721	1-249-415-11	CARBON	680	5%	1/4W F
R722	1-249-417-11	CARBON	1K	5%	1/4W F
R723	1-249-419-11	CARBON	1.5K	5%	1/4W F
R724	1-249-421-11	CARBON	2.2K	5%	1/4W F
R725	1-247-843-11	CARBON	3.3K	5%	1/4W
R726	1-249-427-11	CARBON	6.8K	5%	1/4W F
		< JOG SWITCH >			
RE601	1-762-717-11	SWITCH, JOG (DISC)			
		< SWITCH >			
S711	1-572-184-11	SWITCH, TACTILE (ENTER)			
S721	1-572-184-11	SWITCH, TACTILE (■)			
S722	1-572-184-11	SWITCH, TACTILE (▮▮)			
S723	1-572-184-11	SWITCH, TACTILE (▷)			
S724	1-572-184-11	SWITCH, TACTILE (⏮◁)			
S725	1-572-184-11	SWITCH, TACTILE (▷▷⏭)			

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description				Remark
S726	1-572-184-11	SWITCH, TACTILE (CHECK)				
S727	1-572-184-11	SWITCH, TACTILE (CLEAR)				
**********						
*	1-661-465-11	L. MOTOR BOARD				
		**********				
		< MOTOR >				
M802	A-4604-847-A	MOTOR ASSY (LOADING)				
**********						
*	1-661-467-11	L.SW BOARD				
		**********				
		< SWITCH >				
S801	1-571-300-21	SWITCH, ROTARY (LOADING DET.)				
**********						
*	1-661-468-11	LUMINOUS BOARD				
		**********				
*	4-976-473-01	HOLDER (LED-S)				
		< DIODE >				
D801	8-719-055-84	DIODE GL-528VS1				
**********						
*	A-4699-023-A	MAIN BOARD, COMPLETE (US,CND)				
		**********				
*	A-4699-024-A	MAIN BOARD, COMPLETE				
		**********				
						(AEP,G,UK,E,AUS,PX,SP)
	7-685-871-01	SCREW +BVTT 3X6 (S)				
		< CAPACITOR >				
C102	1-162-282-31	CERAMIC	100PF	10%	50V	
C103	1-162-215-31	CERAMIC	47PF	5%	50V	
C104	1-162-215-31	CERAMIC	47PF	5%	50V	
C106	1-130-472-00	MYLAR	0.0012uF	5%	50V	
C107	1-106-359-00	MYLAR	4700PF	5%	200V	
C108	1-126-052-11	ELECT	100uF	20%	10V	
C202	1-162-282-31	CERAMIC	100PF	10%	50V	
C203	1-162-215-31	CERAMIC	47PF	5%	50V	
C204	1-162-215-31	CERAMIC	47PF	5%	50V	
C206	1-130-472-00	MYLAR	0.0012uF	5%	50V	
C207	1-106-359-00	MYLAR	4700PF	5%	200V	
C208	1-126-052-11	ELECT	100uF	20%	10V	
C301	1-128-489-11	ELECT	3300uF	20%	16V	
C302	1-124-360-00	ELECT	1000uF	20%	16V	
C303	1-124-122-11	ELECT	100uF	20%	50V	

Ref. No.	Part No.	Description				Remark
C304	1-126-851-11	ELECT	22uF	20%	35V	
C305	1-126-163-11	ELECT	4.7uF	20%	50V	
C306	1-126-101-11	ELECT	100uF	20%	16V	
C307	1-126-163-11	ELECT	4.7uF	20%	50V	
C308	1-124-472-11	ELECT	470uF	20%	10V	
C309	1-126-163-11	ELECT	4.7uF	20%	50V	
C310	1-126-163-11	ELECT	4.7uF	20%	50V	
C311	1-124-472-11	ELECT	470uF	20%	10V	
C316	1-161-494-00	CERAMIC	0.022uF		25V	
C317	1-126-052-11	ELECT	100uF	20%	10V	
C318	1-161-494-00	CERAMIC	0.022uF	30%	25V	
C319	1-126-022-11	ELECT	47uF	20%	16V	
C320	1-126-022-11	ELECT	47uF	20%	16V	
C322	1-161-494-00	CERAMIC	0.022uF	30%	25V	
C327	1-162-211-31	CERAMIC	33PF	5%	50V	
C328	1-126-052-11	ELECT	100uF	20%	10V	
C330	1-162-207-31	CERAMIC	22PF	5%	50V	
C331	1-126-052-11	ELECT	100uF	20%	10V	
C332	1-164-159-11	CERAMIC	0.1uF		50V	
C333	1-126-052-11	ELECT	100uF	20%	10V	
C334	1-164-159-11	CERAMIC	0.1uF		50V	
C335	1-164-159-11	CERAMIC	0.1uF		50V	
C336	1-162-198-31	CERAMIC	8.2PF	10%	50V	
C337	1-162-198-31	CERAMIC	8.2PF	10%	50V	
C339	1-164-159-11	CERAMIC	0.1uF		50V	
C340	1-126-052-11	ELECT	100uF	20%	16V	
C351	1-136-165-00	FILM	0.1uF	5%	50V	
C352	1-164-159-11	CERAMIC	0.1uF		50V	
C361	1-136-165-00	FILM	0.1uF	5%	50V	
C362	1-164-159-11	CERAMIC	0.1uF		50V	
C366	1-164-159-11	CERAMIC	0.1uF		50V	
C371	1-136-165-00	FILM	0.1uF	5%	50V	
C700	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C710	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C720	1-162-306-11	CERAMIC	0.01uF	30%	16V	
		< CONNECTOR >				
CN301	1-770-728-11	CONNECTOR, BOARD TO BOARD 9P				
CN302	1-770-728-11	CONNECTOR, BOARD TO BOARD 9P				
* CN303	1-568-839-11	SOCKET, CONNECTOR 23P				
CN304	1-506-468-11	PIN, CONNECTOR 3P				
* CN305	1-568-955-11	PIN, CONNECTOR 6P				
* CN306	1-568-951-11	PIN, CONNECTOR 2P				
CN307	1-568-802-11	SOCKET, CONNECTOR 19P				
* CN308	1-568-951-11	PIN, CONNECTOR 2P				
		< DIODE >				
D301	8-719-210-21	DIODE 11EQS04				
D302	8-719-210-21	DIODE 11EQS04				
D303	8-719-210-21	DIODE 11EQS04				
D304	8-719-210-21	DIODE 11EQS04				
D305	8-719-109-93	DIODE RD6.2ESB2				

MAIN

Ref. No.	Part No.	Description	Remark
D306	8-719-024-99	DIODE 11ES2-NTA2B	
D307	8-719-987-63	DIODE 1N4148M	
D308	8-719-987-63	DIODE 1N4148M	
D310	8-719-987-63	DIODE 1N4148M	
D311	8-719-987-63	DIODE 1N4148M	
D312	8-719-109-85	DIODE RD5.1ES-B2	
D313	8-719-987-63	DIODE 1N4148M	
D315	8-719-110-60	DIODE RD24ES-B	
D316	8-719-109-84	DIODE RD5.1ES-B1	
		< IC >	
IC301	8-759-330-29	IC LA5616	
IC302	8-759-821-93	IC LA5601	
IC303	8-752-875-39	IC CXP84332-045Q	
IC304	8-759-822-38	IC LA6510	
IC305	8-759-634-51	IC M5218AP	
IC307	8-759-362-47	IC CXD8567AM	
IC308	8-759-634-51	IC M5218AP	
IC309	8-759-634-51	IC M5218AP	
		< COIL >	
L304	1-412-297-11	INDUCTOR 3.3uH	
		< TRANSISTOR >	
Q101	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q102	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q201	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q202	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q301	8-729-140-97	TRANSISTOR 2SB734-34	
Q303	8-729-900-65	TRANSISTOR DTA144ES	
Q304	8-729-900-65	TRANSISTOR DTA144ES	
Q305	8-729-900-65	TRANSISTOR DTA144ES	
Q306	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R101	1-249-436-11	CARBON 39K 5% 1/4W	
R102	1-249-436-11	CARBON 39K 5% 1/4W	
R103	1-249-431-11	CARBON 15K 5% 1/4W	
R104	1-249-431-11	CARBON 15K 5% 1/4W	
R105	1-215-461-81	METAL 47K 1% 1/4W	
R106	1-215-461-81	METAL 47K 1% 1/4W	
R108	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R109	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R110	1-249-441-11	CARBON 100K 5% 1/4W	
R111	1-249-409-11	CARBON 220 5% 1/4W	F
R112	1-249-409-11	CARBON 220 5% 1/4W	F
R113	1-249-393-11	CARBON 10 5% 1/4W	F
R115	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R201	1-249-436-11	CARBON 39K 5% 1/4W	
R202	1-249-436-11	CARBON 39K 5% 1/4W	
R203	1-249-431-11	CARBON 15K 5% 1/4W	
R204	1-249-431-11	CARBON 15K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R205	1-215-461-81	METAL 47K 1% 1/4W	
R206	1-215-461-81	METAL 47K 1% 1/4W	
R208	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R209	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R210	1-249-441-11	CARBON 100K 5% 1/4W	
R211	1-249-409-11	CARBON 220 5% 1/4W	F
R212	1-249-409-11	CARBON 220 5% 1/4W	F
R213	1-249-393-11	CARBON 10 5% 1/4W	F
R215	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R301	1-249-431-11	CARBON 15K 5% 1/4W	
R302	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R306	1-247-807-31	CARBON 100 5% 1/4W	
R307	1-247-807-31	CARBON 100 5% 1/4W	
R309	1-249-429-11	CARBON 10K 5% 1/4W	
R310	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R311	1-247-843-11	CARBON 3.3K 5% 1/4W	
R312	1-249-429-11	CARBON 10K 5% 1/4W	
R316	1-249-429-11	CARBON 10K 5% 1/4W	
R317	1-249-429-11	CARBON 10K 5% 1/4W	
R318	1-249-429-11	CARBON 10K 5% 1/4W	
R319	1-249-429-11	CARBON 10K 5% 1/4W	
R321	1-249-417-11	CARBON 1K 5% 1/4W	F
R322	1-249-417-11	CARBON 1K 5% 1/4W	F
R323	1-249-417-11	CARBON 1K 5% 1/4W	F
R324	1-249-411-11	CARBON 330 5% 1/4W	
R325	1-249-424-11	CARBON 3.9K 5% 1/4W	F
R326	1-247-807-31	CARBON 100 5% 1/4W	
R327	1-249-411-11	CARBON 330 5% 1/4W	
R329	1-249-441-11	CARBON 100K 5% 1/4W	
R330	1-249-441-11	CARBON 100K 5% 1/4W	
R331	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R332	1-249-441-11	CARBON 100K 5% 1/4W	
R333	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R334	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R335	1-249-429-11	CARBON 10K 5% 1/4W	
R336	1-249-429-11	CARBON 10K 5% 1/4W	
R337	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R338	1-249-417-11	CARBON 1K 5% 1/4W	F
R339	1-249-417-11	CARBON 1K 5% 1/4W	F
R340	1-249-417-11	CARBON 1K 5% 1/4W	F
R342	1-249-429-11	CARBON 10K 5% 1/4W	
R351	1-249-441-11	CARBON 100K 5% 1/4W	
R352	1-249-441-11	CARBON 100K 5% 1/4W	
R353	1-247-860-11	CARBON 16K 5% 1/4W	
R354	1-249-431-11	CARBON 15K 5% 1/4W	
R355	1-249-382-11	CARBON 1.2 5% 1/6W	F
R356	1-249-382-11	CARBON 1.2 5% 1/6W	F
R357	1-247-883-00	CARBON 150K 5% 1/4W	
R358	1-249-393-11	CARBON 10 5% 1/4W	F
R361	1-247-885-00	CARBON 180K 5% 1/4W	
R362	1-247-885-00	CARBON 180K 5% 1/4W	
R363	1-247-860-11	CARBON 16K 5% 1/4W	

Ref. No.	Part No.	Description			Remark
R364	1-249-431-11	CARBON	15K	5%	1/4W
R365	1-249-382-11	CARBON	1.2	5%	1/6W F
R366	1-249-382-11	CARBON	1.2	5%	1/6W F
R367	1-247-883-00	CARBON	150K	5%	1/4W
R368	1-249-393-11	CARBON	10	5%	1/4W F
R373	1-249-427-11	CARBON	6.8K	5%	1/4W F
R374	1-247-843-11	CARBON	3.3K	5%	1/4W
R375	1-249-439-11	CARBON	68K	5%	1/4W
R376	1-249-427-11	CARBON	6.8K	5%	1/4W F
R377	1-249-427-11	CARBON	6.8K	5%	1/4W F
R378	1-249-417-11	CARBON	1K	5%	1/4W F
R385	1-249-429-11	CARBON	10K	5%	1/4W
R700	1-249-427-11	CARBON	6.8K	5%	1/4W F
R710	1-249-427-11	CARBON	6.8K	5%	1/4W F
R720	1-249-427-11	CARBON	6.8K	5%	1/4W F
		< VARIABLE RESISTOR >			
RV301	1-238-602-11	RES, ADJ, CARBON 47K (Suffix No-11, 12)			
RV301	1-230-723-11	RES, ADJ, CARBON 47K (Suffix No-13)			
		< VIBRATOR >			
X301	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			
X302	1-767-155-11	VIBRATOR, CRYSTAL (33.8688MHz)			
**********					
*	1-661-469-11	RAY-CATCHER BOARD **********			
*	4-985-300-01	HOLDER (P-T)			
		< TRANSISTOR >			
Q801	8-729-926-31	PHOTO TRANSISTOR PT483F1S			
**********					
*	1-661-466-11	T.MOTOR BOARD **********			
		< MOTOR >			
M801	A-4604-847-A	MOTOR ASSY (TABLE)			
**********					
*	1-661-470-11	T.SENS BOARD **********			
		< CONNECTOR >			
CN802	1-506-481-11	PIN, CONNECTOR 2P			
CN803	1-506-481-11	PIN, CONNECTOR 2P			
		< IC >			
IC801	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391			
IC802	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391			
IC803	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391			
		< RESISTOR >			
R801	1-249-416-11	CARBON	820	5%	1/4W F
R802	1-249-416-11	CARBON	820	5%	1/4W F
R803	1-249-416-11	CARBON	820	5%	1/4W F
R804	1-249-415-11	CARBON	680	5%	1/4W F
**********					
		MISCELLANEOUS **********			
4	1-773-183-11	WIRE (FLAT TYPE) (23 CORE)			
5	1-777-345-11	WIRE (FLAT TYPE) (19 CORE)			
⚠12	1-569-007-11	ADAPTOR, CONVERSION 2P (E,PX)			
304	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)			
⚠CNP901	1-575-042-21	CORD, POWER (US,CND)			
⚠CNP901	1-575-651-21	CORD, POWER (AEP,G,SP)			
⚠CNP901	1-696-027-11	CORD, POWER (E,PX)			
⚠CNP901	1-696-845-11	CORD, POWER (AUS)			
⚠CNP901	1-751-529-11	CORD, POWER (UK)			
FL701	1-517-517-11	INDICATOR TUBE, FLUORESCENT			
M801	A-4604-847-A	MOTOR ASSY, LOADING (TABLE)			
M802	A-4604-847-A	MOTOR ASSY, LOADING (LOADING)			
⚠T501	1-429-670-11	TRANSFORMER, POWER (US,CND)			
⚠T501	1-429-671-11	TRANSFORMER, POWER (AEP,G,UK,AUS,SP)			
⚠T501	1-429-672-11	TRANSFORMER, POWER (E,PX)			
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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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